imageCLASS MF7460/7470/7480

SERVICE MANUAL

Canon

NOVEMBER 2007
REV. 0

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products. When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

The following paragraph does not apply to any countries where such provisions are inconsistent with local law.

Trademarks

The product names and company names used in this manual are the registered trademarks of the individual companies.

Copyright

Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
 Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
 REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.
   In the diagrams, ▬▮▮▮▬ represents the path of mechanical drive; where a signal name accompanies the symbol , the arrow ⟶ indicates the direction of the electric signal.
   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.
   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.
All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

Chapter 1 Introduction

Chapter 2 Installation

Chapter 3 Main Controller

Chapter 4 Original Exposure System

Chapter 5 Laser Exposure

Chapter 6 Image Formation

Chapter 7 Pickup and Feed System

Chapter 8 Fixing System

Chapter 9 External and Controls

Chapter 10 RDS

Chapter 11 Maintenance and Inspection

Chapter 12 Measurement and Adjustments

Chapter 13 Correcting Faulty Images

Chapter 14 Error Code

Chapter 15 Service Mode

Chapter 17 Service Tools

Chapter 1 Introduction

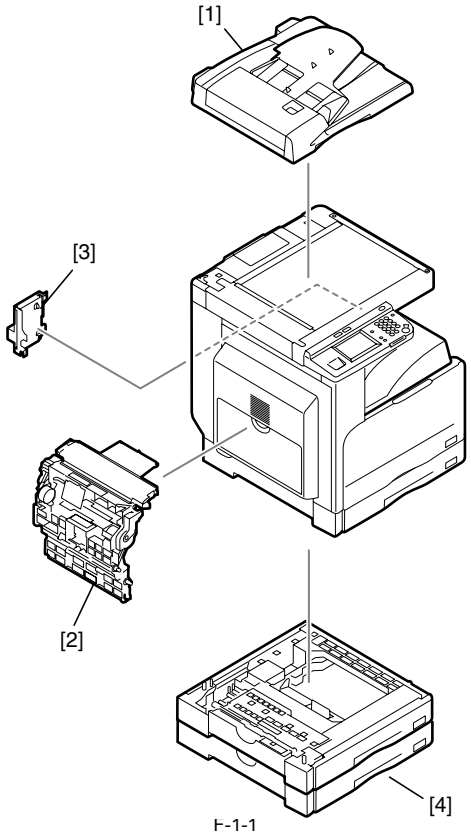
Contents

1.1 System Construction

1.1.1 Pickup/Delivery/Original Handling Accessories System Configuration

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The configuration is as shown in the following figure:



F-1-1

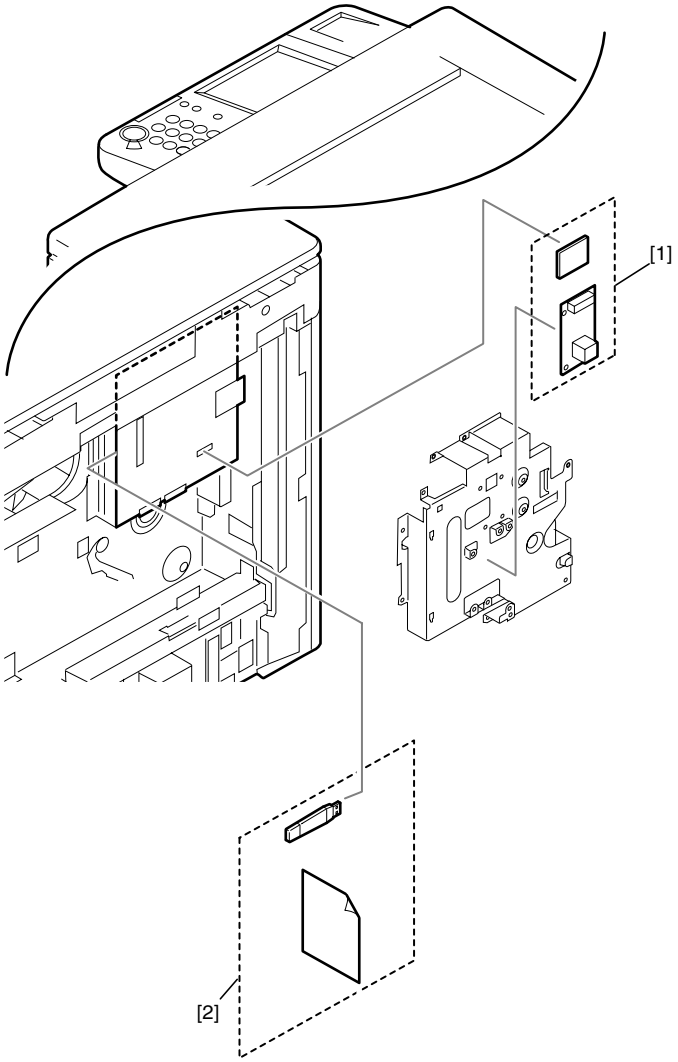
[1]	DADF-P2	*1
[2]	Duplex Unit-B1	*1
[3]	Power Supply Kit-Q1	
[4]	Cassette Feeding Module-Q1	

*1 Standard equipment device

1.1.2 Printing/Transmitting Accessories System Configuration (MF7480)

imageCLASS MF7480

The configuration is as shown in the following figure:



F-1-2

[1] Netwark/PCL Extension kit

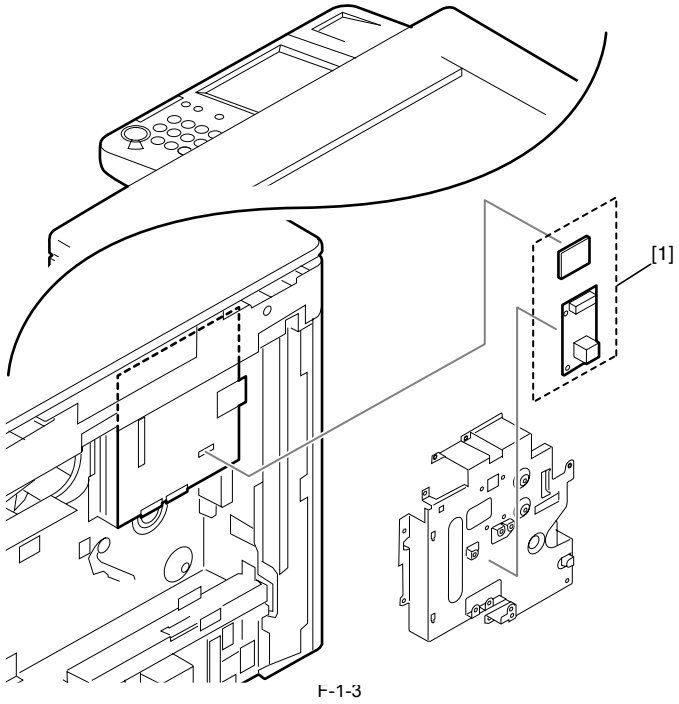
[2] Send Extension kit

* The above kits are standard equipments.

1.1.3 Printing/Transmitting Accessories System Configuration (MF7470)

imageCLASS MF7470

The configuration is as shown in the following figure:



F-1-3

[1] Netwark/PCL Extension kit

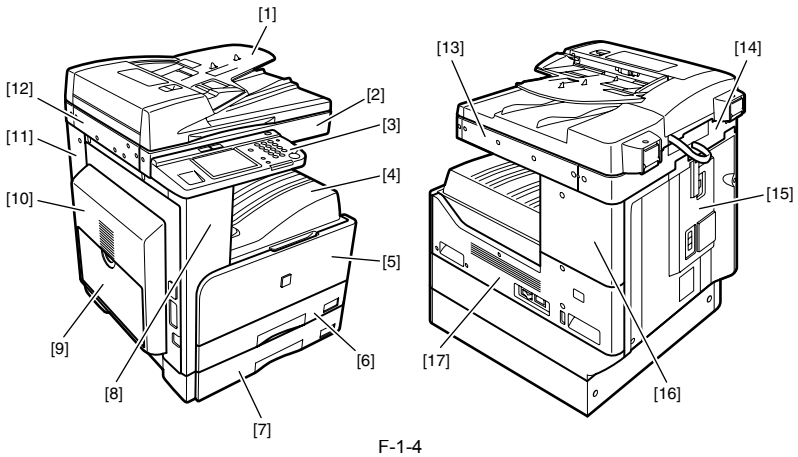
* The above kit is the standard equipment.

1.2 Product Specifications

1.2.1 Names of Parts

1.2.1.1 External View (MF7460/7470/7480)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-1-4

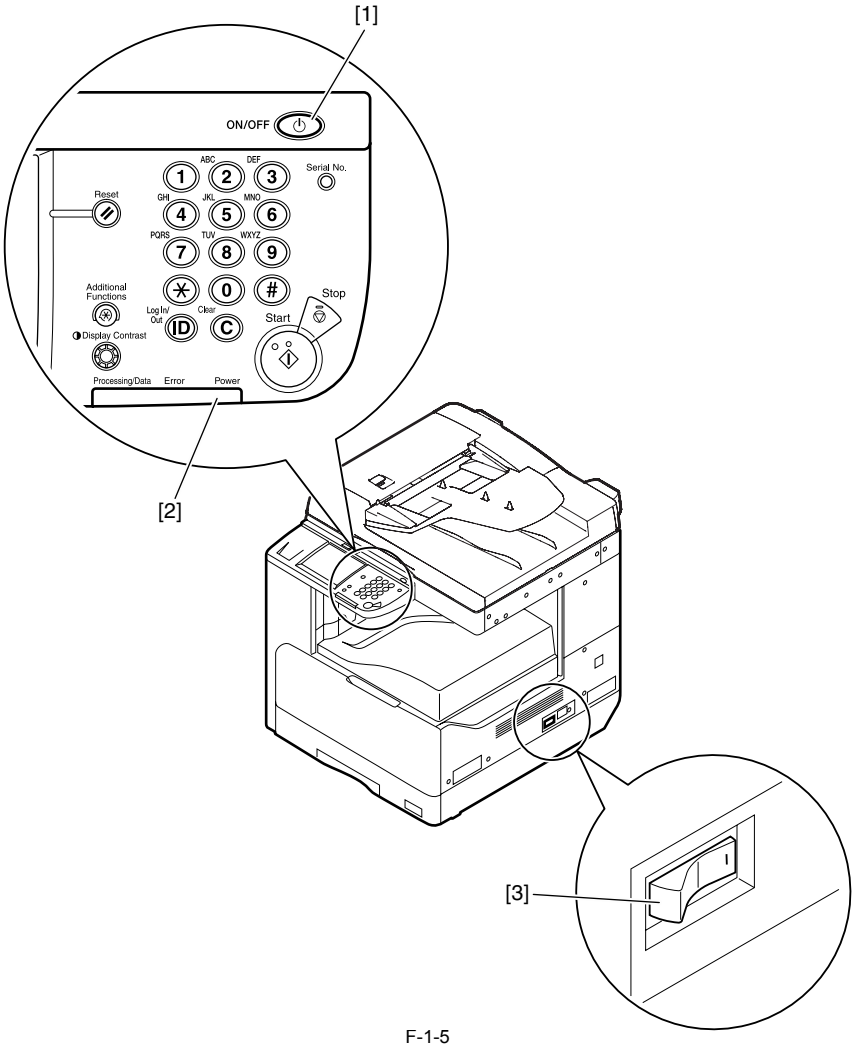
[1]	DADF	[10]	Left door
[2]	Reader front cover	[11]	Left cover (rear)
[3]	Control panel	[12]	Reader left cover
[4]	Delivery tray	[13]	Reader right cover
[5]	Front cover	[14]	Reader rear cover
[6]	Cassette 1	[15]	Rear cover
[7]	Cassette 2	[16]	Right cover (upper)
[8]	Left cover (front)	[17]	Right cover (lower)
[9]	Manual feed tray		

1.2.2 Using the Machine

1.2.2.1 Turning On the Power Switch

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine possesses 2 power switches: main power switch and control power switch. Normally (i.e., unless the machine is in a sleep state), the machine will be supplied with power when you turn on its main power switch.



F-1-5

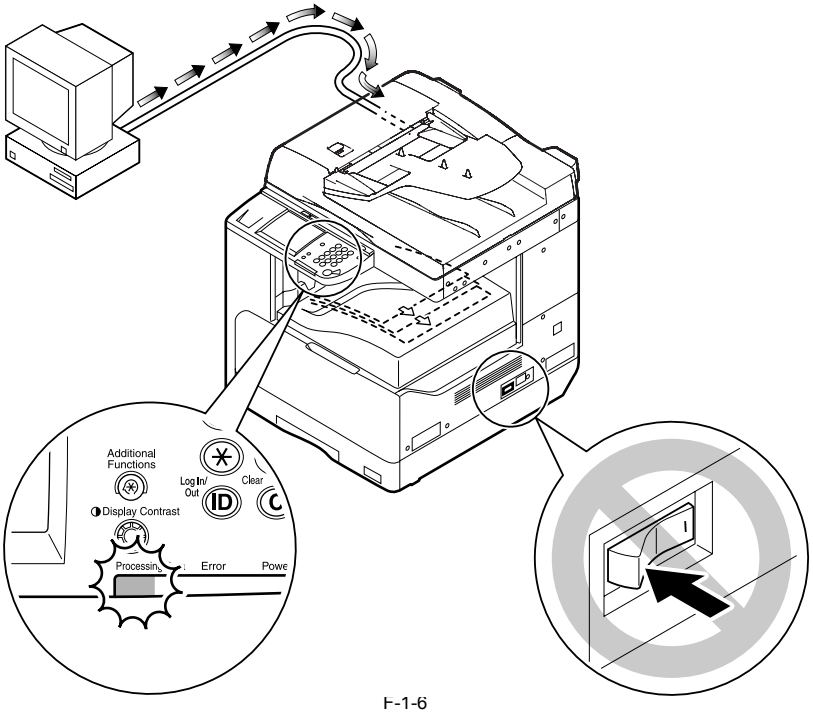
[1]Control panel power switch
[2]Main power lamp
[3]Main power switch

1.2.2.2 When Turning Off the Main Power Switch

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<During printing or fax data transmission/reception>

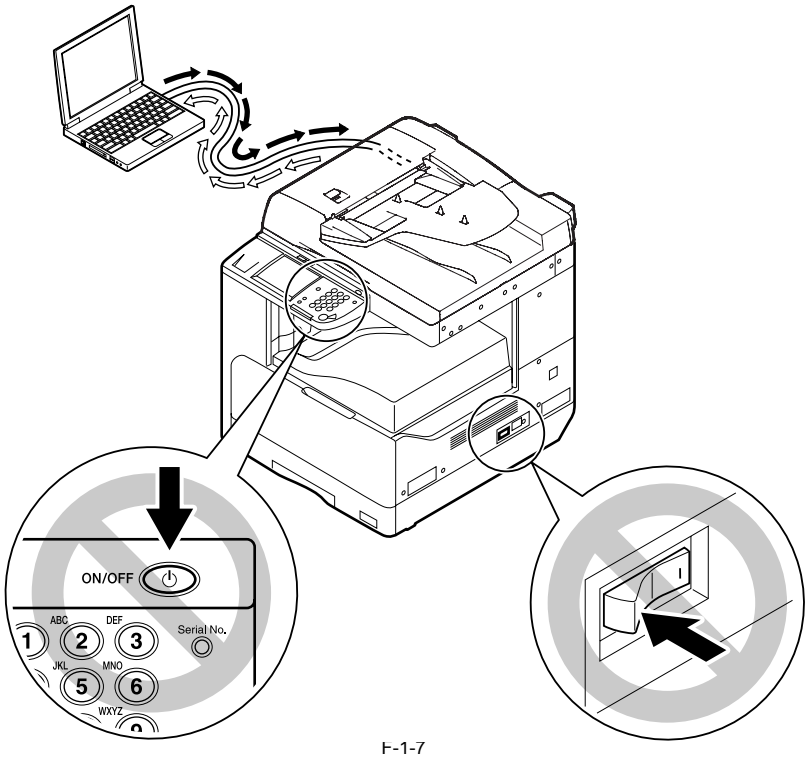
Be sure to operate the main power switch while the Processing/Data lamp on the control panel is not lit.
(Turning off the main switch during printing or fax data transmission/reception can erase the data being processed.)



F-1-6

<During downloading>

⚠
Do not turn off the power switch or ON/OFF switch on the control panel.
(Turning off the main power switch during downloading can make this machine inoperative.)



F-1-7

1.2.3 User Mode Items

1.2.3.1 Common Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-1

Item	Settings
Initial Function	Select Initial Function: Copy*1, Send, Scan Set System Monitor Screen as initial function: On, Off*1 Set [Device] as the default for System Monitor: On*1, Off
Auto Clear Setting	Initial Function*1, Selected Function
Audible Tones	Entry Tone: On *1 (1*1 to 3 levels)*2, Off Error Tone: On *1 (1*1 to 3 levels)*2, Off Send Done Tone: On (1 to 3 levels)*2, Off*1 Receive Done Tone: On (1 to 3 levels)*2, Off*1 Print Done Tone: On *1 (1*1 to 3 levels)*2, Off Scan Done Tone: On *1 (1*1 to 3 levels)*2, Off
Toner Save Mode	High, Low, Off*1
Printer Density	1 to 9 levels; 5*1
Inch Entry	On*1, Off
Drawer Eligibility For APS/ADS	Copy Stack Bypass: On, Off*1 All Other Paper Sources: On*1, Off Printer Stack Bypass: cannot be set All Other Paper Sources: On*1, Off Receive Stack Bypass: On, Off*1 All Other Paper Sources: On*1, Off Other Stack Bypass: On, Off*1 All Other Paper Sources: On*1, Off
Register Paper Type	Paper Drawer 1, Paper Drawer 2*2, Paper Drawer 3*2, Paper Drawer 4*2: Plain*1, Recycled, Color, 3-hole punch, Bond, Heavy Paper 1

Item	Settings
Energy Consumption in Sleep Mode	Low*1, High
Tray Designation*2	If the Optional Inner 2 Way Tray-E2 Is Attached: Tray A: Copy*1, Printer*1, Receive*1, Other*1 Tray B: Copy*1, Printer*1, Receive*1, Other*1 If the Optional Finisher-U2 and Additional Finisher Tray-C1 Are Attached: Tray A: Copy*1, Printer*1, Receive*1, Other*1 Tray B: Copy*1, Printer*1, Receive*1, Other*1
Stack Bypass Standard Settings	On: Paper Size, Paper Type Off*1
Paper Feed Method Switch	Stack Bypass, Paper Drawer 1, Paper Drawer 2*2, Paper Drawer 3*2, Paper Drawer 4*2: Speed*1, Print Side
Language Switch	On, Off*1
Reversed Display (B/W)	On, Off*1
Error Display for Dirty Feeder	On*1, Off
Data Compress. Ratio for Remote Scans	High Ratio, Normal*1, Low Ratio
Gamma Value for Remote Scans	Gamma 1.0, Gamma 1.4, Gamma 1.8*1, Gamma 2.2
Initialize Common Settings	Initialize: Yes, No

*1 Indicates the default setting.
*2 Indicates items that appear only when the appropriate optional equipment is attached.

1.2.3.2 Timer Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-2

Item	Settings
Date & Time Settings	Date and Time Setting (12 digit number) Time Zone Settings: GMT -12:00 to GMT +12:00; GMT -5:00*1 Daylight Saving Time Settings: On, Off*1
Auto Sleep Time	Use Auto Sleep Time: On*1, Off 3 to 30 minutes; 5*1
Auto Clear Time	0 (Off) to 9 minutes, in one minute increments; 2 min.*1

*1 Indicates the default setting.

1.2.3.3 Adjustment/Cleaning

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-3

Item	Settings
Transfer Roller Cleaning	Press [Start].
Drum Cleaning	Press [Start].
Fixing Unit Cleaning	Cleaning Sheet Print, press [Start].
Feeder Cleaning	Press [Start].
Special Mode M	Standard*1, Low, Moderate, High
Special Mode N	Manual (Medium, High), Off
Special Mode O	Stack Bypass: Medium, High, Off*1 Drawer: Medium, High, Off*1
Special Mode P	Off*1, Medium, High
Bond Special Fixing Mode	On, Off*1
Special Mode S	Speed Priority 1, Speed Priority 2, Off*1
Rotate Collate Adjustment	Speed Priority 1*1, Speed Priority 2, Image Priority
Auto Adjustment for Dirty Feeder	On*1, Off

*1 Indicates the default setting.

1.2.3.4 Report Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-4

Item	Settings
Settings	TX Report: On, For Error Only*1, Off Report With TX Image: On*1, Off Activity Report Auto Print: On*1, Off Send/Receive Separate: On, Off*1 RX Report: On, For Error Only, Off*1
Print List	Address Book List One-touch Buttons: Yes, No Address Book: Yes, No User's Data List: Yes, No

*1 Indicates the default setting.

1.2.3.5 System Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-5

Item	Settings
System Manager Settings	
System Manager	32 characters maximum
System Manager ID	Seven digit number maximum
System Password	Seven digit number maximum
Department ID Management	
Department ID Management	On, Off*1
Register ID/Password	Register, Edit, Erase, Set page limits
Page Totals	Clear, Clear All Totals, Print List
Allow ID Unknown Printer Jobs	On*1, Off
Allow ID Unknown Remote Scan Jobs	On*1, Off
Network Settings	
Forwarding Settings	
Receive Type*2	All*1, Fax, I-Fax
Validate/Invalidate	On, Off*1
Register	Condition Name: 50 characters maximum Forwarding Conditions Receive Type: Fax*2, I-Fax
Forward w/o Cond.	Receive Type: Fax*2, I-Fax Forwarding Destination: Select from the list of registered addresses. File Format: TIFF*1, PDF, Divide into Pages
Detail/Edit	Condition Name: 50 Characters maximum Forwarding Conditions Receive Type: Fax*2, I-Fax
Erase	Yes, No
Print List	Yes, No
Device Info Settings	
Device Name	32 characters maximum
Location	32 characters maximum
User ID Management	On, Off*1
Communications Settings	
E-mail/I-Fax Settings	Maximum TX Data Size: 0 to 99 MB; 3 MB*1 Divided TX over Max.Data Size: On, Off*1 Default Subject: 40 characters maximum; Attached Image*1
Fax Settings*2	Send Start Speed: 33600 bps*1, 14400 bps, 9600 bps, 7200 bps, 4800 bps, 2400 bps Receive Start Speed: 33600 bps*1, 14400 bps, 9600 bps, 7200 bps, 4800 bps, 2400 bps
Memory Lock Settings	On: Option Off*1
Remote UI On/Off On*1	On*1, Off

Item	Settings
Restrict the Send Function	Address Book Password: 7 digits maximum Restrict New Addresses: On, Off*1 Allow Fax Driver TX: On*1, Off Restrict Recall: On, Off*1 Confirm Entered Fax Numbers*2: On, Off*1 Restrict Sequential Broadcast: Broadcast Confirmation, Prohibit Broadcast, Off*1
License Registration	Enter a license key using the numeric keys.
Display Dept. ID/User Name	On*1, Off
Auto Online/Offline	Auto Online: On, Off*1 Auto Offline: On, Off*1
Job Log Display	On*1, Off
Use USB Device	On*1, Off
Failed Forwarding Document Set.	Print Image: On*1, Off Store Image to Memory: On, Off*1
PDL Selection (PnP)	UFRII LT*1, PCL5e, PCL6, FAX

*1 Indicates the default setting.
*2 Indicates items that appear only when the appropriate optional equipment is attached.

1.2.3.6 Copy Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-6

Item	Settings
Image Orientation Priority	On, Off*1
Auto Orientation	On*1, Off
Standard Settings	Store, Initialize
Initialize Copy Settings	Yes, No

*1 Indicates the default setting.

1.2.3.7 Communication Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-7

Item	Settings
Common Settings: TX Settings	
Unit Name	24 characters maximum
Data Compression Ratio	High Ratio, Normal*1, Low Ratio
Retry Times	0 to 5 times; 3 times*1
Edit Standard Send Settings	Store, Initialize
TX Terminal ID	On: Option (Printing Position, Telephone # Mark*2)
Gamma Value for Color Send Jobs	Gamma 1.0, Gamma 1.4, Gamma 1.8*1, Gamma 2.2
Sharpness	1 to 7 levels, 4*1
Register Favorites Button	M1 to M18
Color TX Scan Settings	Speed Priority*1, Image Priorit
Default Screen for Send	Favorite Buttons, One-touch Buttons, Initial Function*1
Initialize TX Settings	Yes, No
Common Settings: RX Settings	
2-Sided Print	On, Off*1
Select Cassette	Switch A: On*1, Off Switch B: On*1, Off Switch C: On*1, Off Switch D: On*1, Off
Receive Reduction	On*1 RX Reduction: Auto*1, Fix. Red. Reduce %: 97, 95, 90*1, 75% Reduce Direction Ver. Hor., Vertical Only*1 Off
Received Page Footer	On, Off*1
Continue Printing When Toner Is Out	On, Off*1
Fax Settings: User Settings*2	
Unit Telephone #	20 characters maximum
Tel Line Type	Pulse, Tone*1

Item	Settings
Monitor Volume Control	Volume Control: 0 to 3 levels, 1*1
Fax Settings: TX Settings*2	
ECM TX	On*1, Off
Pause Time	1 to 15 seconds; 2 seconds*1
Auto Redial	On*1 Option: Redial Times: 1 to 10 times; 2 times*1 Redial Interval: 2 to 99 minutes; 2*1 minutes*1 TX Error Redial: On*1, Off Off
Check Dial Tone Before Sending	On*1, Off
Rotate Send	On*1, Off
Fax Setting: RX Settings*2	
ECM RX	On*1, Off

*1 Indicates the default setting.
*2 Indicates items that appear only when the appropriate optional equipment is attached.

1.2.3.8 Printer Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-8

Item	Settings
DEFAULT PAPERSIZE	LTR*, STMT, EXECUTIV, ISO-B5, ISO-C5, COM10, MONARCH, DL, A4, A3, B4, B5, A5, 11X17, LGL
DEFAULT PAPERTYPE	PLAIN PAPER*, COLOR, RECYCLED, HEAVY PAPER 1, HEAVY PAPER 2, HEAVY PAPER 3, BOND, 3-HOLE PUNCH PAPER, TRANSPARENCY, LABELS, ENVELOPE
COPIES	1 to 999; 1*
2-SIDED PRINTING	OFF*, ON
PRINT QUALITY	
IMAGE REFINEMENT	ON*, OFF
DENSITY	9 levels; 5*
TONER SAVER	OFF*, ON
PAGE LAYOUT	
BINDING	LONG EDGE*, SHORT EDG
MARGIN	INCHES*: -01.90 INCHES to 01.90 INCHES; 00.00 INCHES* MM: -50.0 MM to 50.0 MM; 0.0 MM*
AUTO ERROR SKIP	OFF*, ON
ERROR TIME OUT	ON* (TIME OUT PERIOD: 5 to 300 SEC), OFF; 15 SEC*
COLLATE	OFF*, COLLATE, ROTATE + COLLATE*1, ROTATE + GROUP*1, OFFSET + COLLATE*2, OFFSET + GROUP*2, STAPLE*2 (STAPLE POSITION: TOP LEFT*, TOP RIGHT, BOTTOM LEFT)
INIT. PRINTER SET	OFF*, ON
RESET PRINTER	OFF*, ON
PCL Settings	
PAPER SAVE	OFF*, ON
ORIENTATION	PORTRAIT*, LANDSCAPE
FONT NUMBER	0 to 89; 0*
POINT SIZE	4.00 to 999.75 point; 12.00 point*
PITCH	0.44 to 99.99 cpi; 10.00 cpi*
FORM LINES	5 to 128 lines; 60 lines*
SYMBOL SET	PC8*, PC850, PC852, PC858, PC8DN, PC8TK, PC1004, PSTEXT, ROMAN8, ROMAN9, WIN30, WINBALT, WINL1, WINL2, WINL5, DESKTOP, ISO4, ISO6, ISO11, ISO15, ISO17, ISO21, ISO60, ISO69, ISOL1, ISOL2, ISOL5, ISOL6, ISOL9, LEGAL, MCTEXT, PC775
CUSTOM PAPER	OFF*, ON
UNIT OF MEASURE	INCHES*, MILLIMETERS
X DIMENSION	5.83" to 17.00" (148 mm to 432 mm); 17.00"* (432 mm)
Y DIMENSION	3.75" to 11.69" (95 mm to 297 mm); 11.69"* (297 mm)
APPEND CR TO LF	NO*, YES
ENLARGE A4	OFF*, ON
HALFTONE	
TEXT	TONE, GRADATION, RESOLUTION*

Item	Settings
GRAPHICS	TONE*, GRADATION, RESOLUTION
IMAGE	TONE*, GRADATION, RESOLUTION
BarDIMM*3	ENABLE*, DISABLE
FreeScape	~*, ", #, $, /, \, ?, {, }, |, OFF

An asterisk(*) indicates the default settings.
*1 Rotate items do not appear when the optional Finisher-U2 is attached.
*2 Offset and staple items appear only when the optional Finisher-U2 is attached.
*3 This setting is available only if the BarDIMM function is activated.

1.2.3.9 Address Book Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-1-9

Item	Settings
Register Address: Register New Address	
Fax*2	Fax Number: 120 characters maximum Option: Sending Speed, Long Distance, ECM TX Register Name: 16 characters maximum
E-mail	E-mail Address: 120 characters maximum Register Name: 16 characters maximum
I-Fax	I-Fax Address: 120 characters maximum Register Name: 16 characters maximum
File	Protocol: FTP*1, Windows (SMB) Host Name: 120 characters maximum File Path: 120 characters maximum User: 24 characters maximum Password: 24 characters maximum (FTP), 14 characters maximum (Windows (SMB)) Register Name: 16 characters maximum
Group	Address Book Erase Register Name: 16 characters maximum
Register Address: Erase	
Register Address: Edit	
One-touch Buttons	
Register/Edit	You can register or edit the items of One-touch Buttons for Fax, E-mail, I-Fax, File, and Group shown in Register New Add above. Key Name: 12 characters maximum

*1 Indicates the default setting.
*2 Indicates items that appear only when the appropriate optional equipment is attached.

1.2.3.10 Recommended setting of system management information

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

When multiple users use the machine, it is necessary to advise each user to set the system management information.
Setting ID and password of system administrator on the operation unit under (Additional functions key) > [System management setting] > [Setting of system administrator's information] has an effect of restraining the third person from falsifying information, for the ID and password are required when a user carries out an important setting of the machine.
Under the environment that the setting is not done, if a user who does not sufficiently know operation situation of the machine tries to change the setting, following troubles may occur.
- When the user changes [User ID Management] from [off] to [on], copying operation cannot be done unless ID and password are input.
- When each setting is changed on the network from RUI, that enables to falsify data of address book or delete log.
- When TCP/IP fixed address is changed on the network setting, printing operation via network cannot be done until the port setting is changed.
- When usage restriction of USB device is changed to [on], printing operation via USB becomes disabled.

1.2.3.11 The Reference Information of the Department ID Management

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Function:
If Department is registered in Department ID Management, users are required to input the Department ID and password when inputting data from the operation unit of the machine. Also, the registration enables to restrict usage and control the usage number of times of Total Parts, Copy, B&W Scan, Color Scan, or Print.
Setting method:
Register Department ID in Department ID Management under Additional Functions key>System Setting.
Operation outline:
Department ID can be registered in [Department ID management] from the operation unit of the machine even though [System Manager Settings] is not done.
When registering data in [Department ID Management] using RUI, you need to register yourself as a system manager in [System Manager Settings] and login as a system manager.

1.2.4 Maintenance by the User

1.2.4.1 User Maintenance Items

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

No.	Item	Maintenance cycle	Remarks
[1]	Pressure plate cleaning	As required	
[2]	Copyboard glass(large) cleaning	As required	
[3]	Copyboard glass(small) cleaning	When the message appears	
[4]	Copyboard holder (jump board)	As required	
[5]	Fixing pressure roller cleaning	As required	Clean every 10000 sheets
[6]	Exterior cleaning	As required	

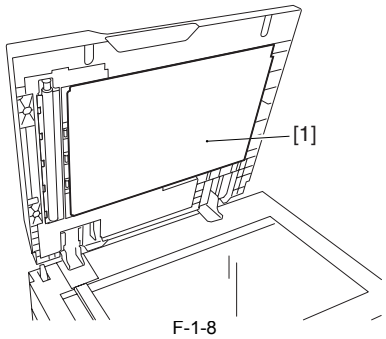
1.2.4.2 Cleaning (Touch panel type)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The parts that should be cleaned by the customer to maintain the design performance and the cleaning method are described below.
The service engineer should instruct the customer to clean the machine at regular intervals (once a month).

1. Pressure Plate

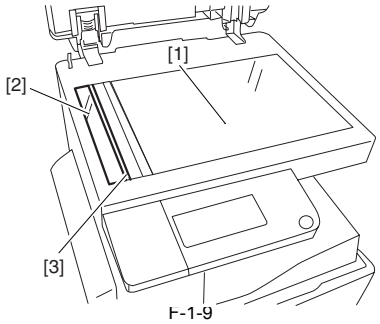
Clean the pressure plates [1] with a cloth dampened with water or neutral detergent and squeezed hard, and then wipe it with a dry soft cloth.



F-1-8

2. Document Glass/Glass holder (jump board)

Clean the document glass [1] with a cloth dampened with water or neutral detergent and squeezed hard, and then wipe them with a dry soft cloth.
When an ADF is installed, clean is document glass (small) [2] and glass holder [3] in the same manner.



F-1-9

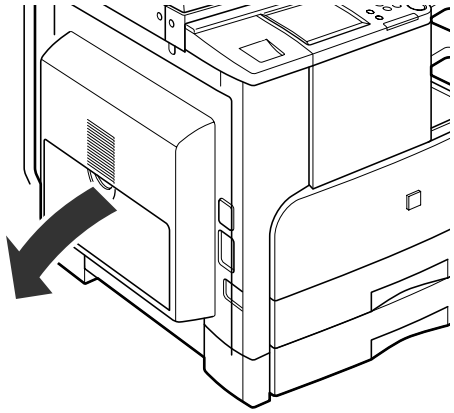
3. Cleaning the Fixing Pressure Roller

If white streaks are seen on the printed paper, the fixing pressure roller can be dirty. If white streaks are seen on the printed paper, clean the fixing pressure roller in the user mode.

When cleaning the fixing pressure roller, manually feed A4 paper.

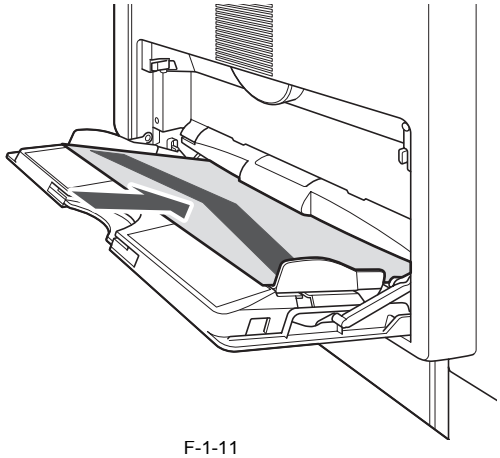
MEMO:
The time required for cleaning is about 100 seconds.

1) Press the Additional functions key to enter the user mode.
2) Select "Adjustment/Cleaning" on the touch panel.
3) Select "Fixing Unit Cleaning" and then press [Cleaning Sheet Print]. The cleaning pattern will be printed.
4) Open the manual feed tray.



F-1-10

5) Place the cleaning pattern printed in step 3 in the manual feed tray with "V" up.



F-1-11

6) Select the size of the loaded paper and then press [Next].
7) Select the size of the loaded paper and then press [OK].
8) Press [Start] and then Cleaning will start.

1.2.5 Safety

1.2.5.1 Safety of the Laser Light

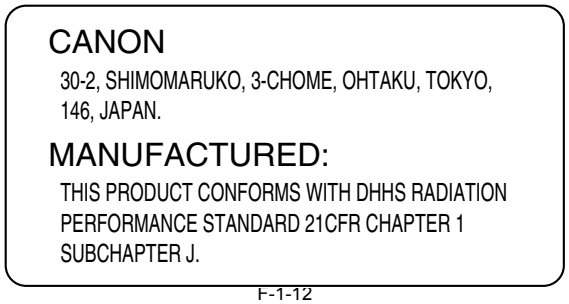
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Laser light can prove to be hazardous to the human body. The machine's laser unit is fully enclosed in a protective housing and external covers so that its light will not escape outside as long as the machine is used normally.

1.2.5.2 CDRH Regulations

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The Center for Devices and Radiological Health of the US Food and Drum Administration put into force regulations concerning laser products on August 2, 1976. These regulations apply to laser products manufactured on and after August 1, 1976, and the sale of laser products not certified under the regulations is banned within the Untied States. The label shown here indicates compliance with the CDRH regulations, and its attachment is required on all laser products that are sold in the United States.

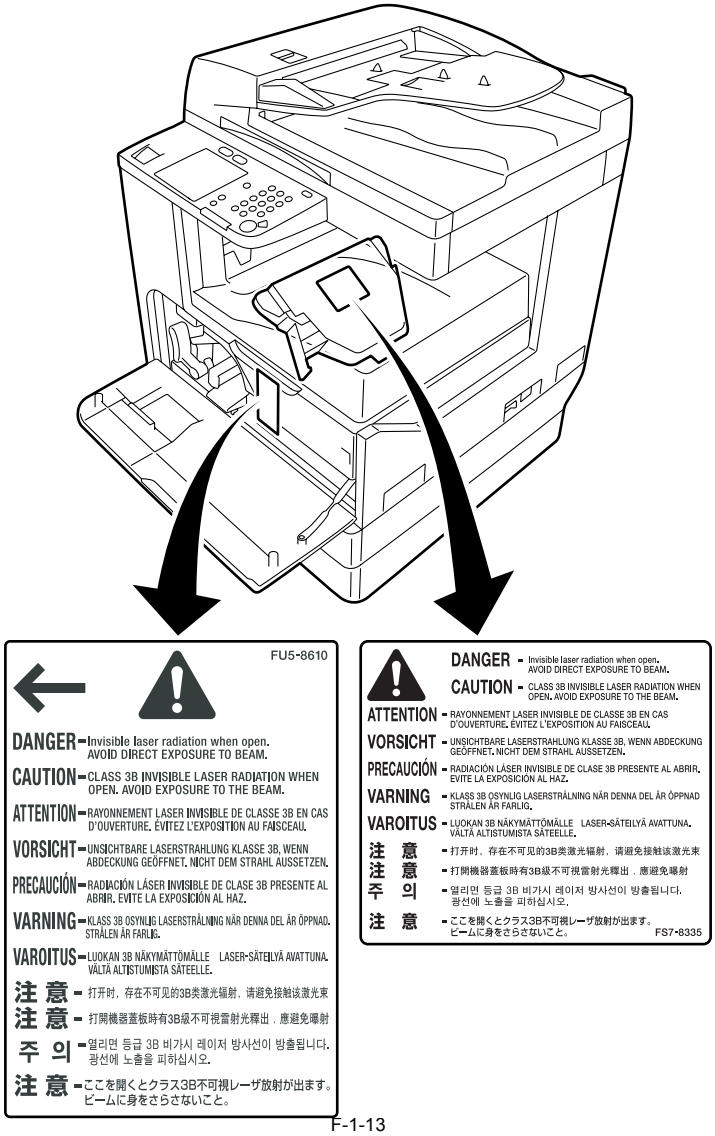


F-1-12

1.2.5.3 Handling the Laser Unit

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The laser scanner unit emits invisible laser light inside it. If exposed to laser light, the human eye can irreparably be damaged. Never attempt to disassemble the laser scanner unit. (It is not designed for servicing in the field.)
Warning labels are affixed to the top cover of the laser scanner unit and the inner cover inside the front cover of this machine.



F-1-13

1.2.5.4 Safety of Toner

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine's toner is a non-toxic material made of plastic, iron, and small amounts of dye.

⚠
Do not throw toner into fire. It may cause explosion.

Toner on Clothing or Skin
1. If your clothing or skin has come into contact with toner, wipe it off with tissue; then, wash it off with water.
2. Do not use warm water, which will cause the toner to jell and fuse permanently with the fibers of the cloth.
3. Do not bring toner into contact with plastic material. It tends to react easily.

1.2.5.5 Point to Note about Fire

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

It is dangerous to throw lithium batteries and parts and components containing flammable substances, such as cartridges, etc., into fire. Such parts and components must be disposed of in accordance with local laws and regulations.

1.2.5.6 Cautions as to the replacement and disposal of lithium battery

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Risk of explosion if Battery is replaced by an incorrect type.
Dispose of used Batteries according to the instructions.

1.2.6 Product Specifications

1.2.6.1 Product Specifications

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Copyboard	stream reading, fixed reading
Body	desktop
Light source type	LED array (CIS)
Photosensitive medium	OPC drum (30-mm dia.)
Image reading method	CCD (CIS)
Reproduction method	indirect electrostatic
Exposure method	by laser light
Charging method	by AC charging roller
Development method	1-component toner projection
Transfer method	by transfer roller
Separation method	by curvature + static eliminator
Cassette pickup method	retard
Multifeeder pickup method	dual processing
Drum cleaning method	by cleaning blade
Fixing method	on-demand
Delivery method	face-down
Reproduction ratio	50% to 200%
Warm-up time	approx. 26sec
Image margin (leading edge)	3.0 -/+1.5 mm
Image margin (trailing edge)	3.0 -/+2.0 mm
Image margin (left/right)	left edge: 3.0 -/+2.0 mm right edge: 0.5 mm or more
Non-image width (leading edge)	3.0 -/+2.0 mm
Non-image width (trailing edge)	5.0 -/+2.0 mm
Non-image width (left/right)	3.0 -/+2.0 mm
Number of gradations	256 gradations
Reading resolution	600x600dpi
Printing resolution	1200dpix1200dpi
First print time	6.9 sec or less
Cassette capacity	250sheets (80 g/m2)
Multifeeder tray capacity	100 sheets (A4/B5/LTR, 64 g/m2) 50 sheets (A3/B4/LDR/LGL, 64 g/m2) 100 sheets (A5/A5R/STMT, 64 g/m2) 80 sheets (A4/B5/LTR, 80 g/m2) 50 sheets (A3/B4/LDR/LGL, 80 g/m2) 80 sheets (A5/A5R/STMT, 80 g/m2) 50 sheets (heavy paper, A4/B5/LTR, 105 g/m2) 50 sheets (heavy paper, A3/B4/LDR/LGL, 105 g/m2) 50 sheets (heavy paper, A5/A5R/STMT, 105 g/m2) 50 sheets (heavy paper, A4/B5/LTR, 128 g/m2) 35 sheets (heavy paper, A3/B4/LDR/LGL, 128 g/m2) 50 sheets (heavy paper, A5/A5R/STMT, 128 g/m2) 50 sheets (OHP) 1 sheet (label) 10 sheets (envelope) 40 sheets (post card)
Continuous reproduction	1 to 99 sheets
Toner type	magnetic negative toner
Original type	sheet, book
Maximum original size	A3/LDR
Original size detection function	by reflection type sensor
Sleep mode	yes
Option	See the system configuration chart.
Operating environment (temperature range)	15 to 27.5 deg C
Operating environment (humidity range)	25% to 75%
Operating environment (atmospheric pressure)	0.6 to 1.0 atm
Noise	69.5dB or less
Power supply rating	120V
Power consumption (maximum)	1.26KW or less
Power consumption	Average power consumption 511W or less (At the option full-equipped: 516W)
Ozone	0.01 ppm or less (initial) 0.035 ppm or less (after endurance)
Dimensions	622mm x 676mm x 757mm (WxDxH)
Weight	approx. 56 kg

1.2.7 Function List

1.2.7.1 Printing Speed (MF7460/MF7470/MF7480)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

	Paper size	Single-sided		Double-sided	
		Casette feed	Manual feed	Casette feed	Manual feed
Plain paper	A4	25	25	23.5	23.5
	A5	25.5	25.5	-	-
	A5R	-	9.5	-	9
	B5	23	23	22.5	22.5
	B5R	9	9	9	9
	A4R	11	11	9.5	9.5
	B4	11	11	9	9
	A3	15	15	10	10
	STMT	10.5	10.5	-	9
	STMTR	-	9.5	-	9
	EXE	-	23	-	21
	LTR	25	25	27.5	27.5
	LTRR	11.5	11.5	9.5	9.5
	LGL	11	11	9	9
	LDR	15	15	9.5	9.5
	8K	10.5	10.5	9	9
	16K	23	23	22.5	22.5
	16KR	11	11	9	9
Heavy paper; 81 to 105g/m2 *1 (Heavy paper; 106 to 128g/m2 *2)	A4	23 (-)	23 (23)	22 (-)	22 (-)
	A5	47.5 (-)	17.5 (7.5)	-	-
	A5R	-	10 (7)	-	8 (-)
	B5	16.5 (-)	16.5 (8)	16 (-)	16 (-)
	B5R	8 (-)	8 (7.5)	7.5 (-)	7.5 (-)
	A4R	9.5 (-)	9.5 (5.5)	9 (-)	9 (-)
	B4	9.5 (-)	9.5 (6.5)	8.5 (-)	8.5 (-)
	A3	14 (-)	14 (14)	9.5 (-)	9.5 (-)
	STMT	9 (-)	9 (8)	-	8 (-)
	STMTR	-	8 (7.5)	-	-
	EXE	-	16.5 (8)	-	15.5 (-)
	LTR	22.5 (-)	22.5 (22.5)	22 (-)	22 (-)
	LTRR	9.5 (-)	9.5 (4.5)	9 (-)	9 (-)
	LGL	9.5 (-)	9.5 (4.5)	8.5 (-)	8.5 (-)
	LDR	13.5 (-)	13.5 (13.5)	9.5 (-)	9.5 (-)
	8K	9 (-)	9 (4.5)	8 (-)	8 (-)
	16K	16.5 (-)	16.5 (8)	16 (-)	16 (-)
	16KR	9.5 (-)	9.5 (4.5)	8.5 (-)	8.5 (-)
Bond paper *3 (Bond paper H *4)	A4	-	7.5 (6)	-	7.5 (6)
	A5	-	6 (5)	-	-
	A5R	-	6 (5)	-	6 (4.5
	B5	-	6 (5)	-	6 (5)
	B5R	-	5.5 (4.5)	-	5.5 (4)
	A4R	-	4.5 (4)	-	4.5 (3.5)
	B4	-	5.5 (4.5)	-	5 (4)
	A3	-	6 (5)	-	6 (5)
	STMT	6.5 (5)	6.5 (5)	-	-
	STMTR	-	6 (5)	-	5.5 (4.5)
	EXE	-	6 (5)	-	-
	LTR	7.5 (6)	7.5 (6)	7.5 (6)	7.5 (6)
	LTRR	4.5 (4)	4.5 (4)	4.5 (3)	4.5 (3)
	LGL	4 (3.5)	4 (3.5)	3.5 (3)	3.5 (3)
	LDR	6 (5)	6 (5)	6 (5)	6 (5)
	8K	-	-	-	-
	16K	-	-	-	-
	16KR	-	-	-	-
OHP	A4	-	30	-	-
	LTR	-	30	-	-

Envelope	Monarch	-	6.1	-	-
	COM10	-	6	-	-
	ISO-B5	-	6.1	-	-
	ISO-C5	-	6	-	-
	DL	-	6	-	-
Postcard	Postcard	-	11.5	-	-
	Double postal card	-	10.5	-	-
	4-plane post card	-	23.5	-	-

*1. Bond SP. FIX. Mode in the user mode: OFF
*2. Bond SP. FIX. Mode in the user mode: ON
Supplement:
- The above copy speed does not change irrespective of whether paper is supplied from the upper/lower cassette, the manual feed tray, or from the cassette feeding module.
- The copy speed may become down when the copies make continuously one minutes or more with the narrow width paper. The slowdown is reduced with the following user mode. User Mode: Additional Functions > Adjust/Cleaning > Spesial Mode S > Speed Priority 1 or 2

Chapter 2 Installation

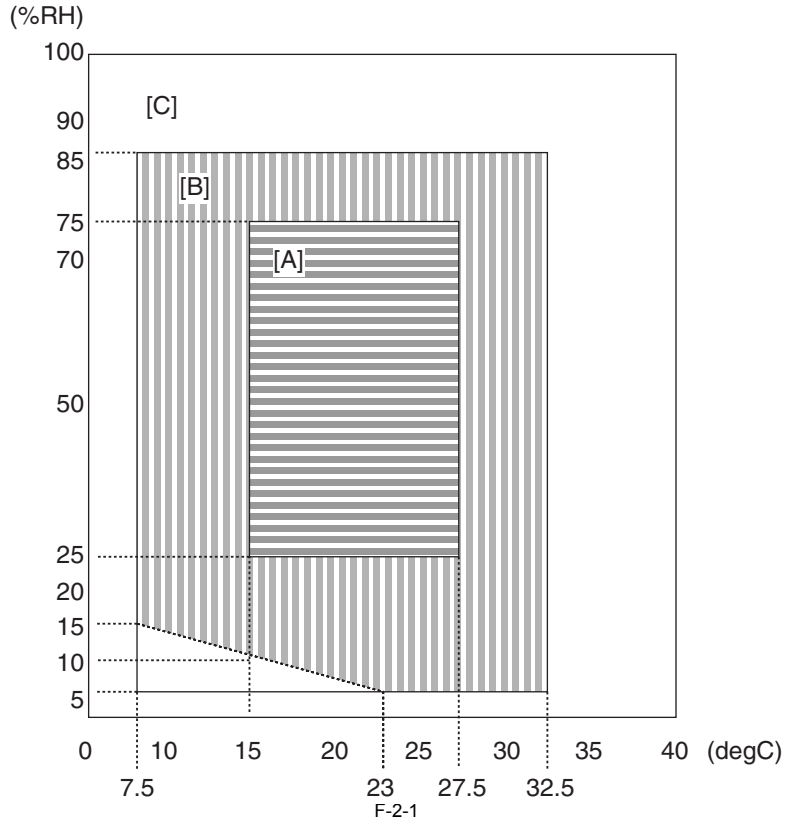
Contents

2.1 Making Pre-Checks

2.1.1 Selecting the Site of Installation

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

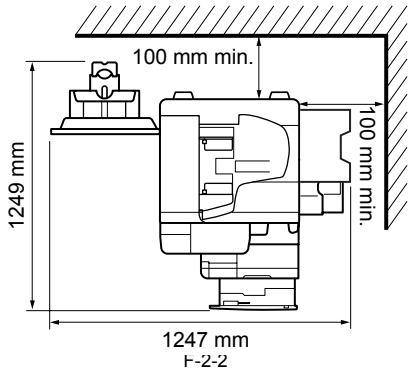
Select the site of installation against the following requirements; if possible, visit the user's before delivery of the machine:
1) There must be a power outlet properly grounded and rated as indicated (-/+10%) for exclusive use by the machine.
2) The environment of the room must be as indicated in the following diagram, and the machine must not be installed near a water faucet, water boiler, humidifier, or refrigerator:



F-2-1

<Environmental zone assured>
[A]: Zone A: Satisfies all the conditions of the standard image quality and paper feed performance.
[B]: Zone B: Inferior to Zone A in terms of the standard image quality and paper feed performance, or may not apply.
[C]: Zone C: Problems associated with safety, malfunctions, or incorrect message display do not occur, but image quality and paper feed performance are not guaranteed.

3) The machine must not be installed near a source of fire or in an area subject to dust or ammonium gas.
If the area is exposed to direct rays of the sun, provide curtains to the window.
4) The level of ozone generated by the machine will not affect the health of individuals around it. Some, however, may find its odor unpleasant as while remaining in contact with it for long hours. Be sure that the room is well ventilated.
5) The floor of the machine must be level so that the feet of the machine will remain in contact and the machine will remain level.
6) The machine must be at least 10 cm away from any wall, permitting unobstructed use.



F-2-2

7) The machine must be placed in a well ventilated area. It is important to make sure, however, that the machine is not near the air vent (for suction) of the room.

2.1.2 Before Starting the Work

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

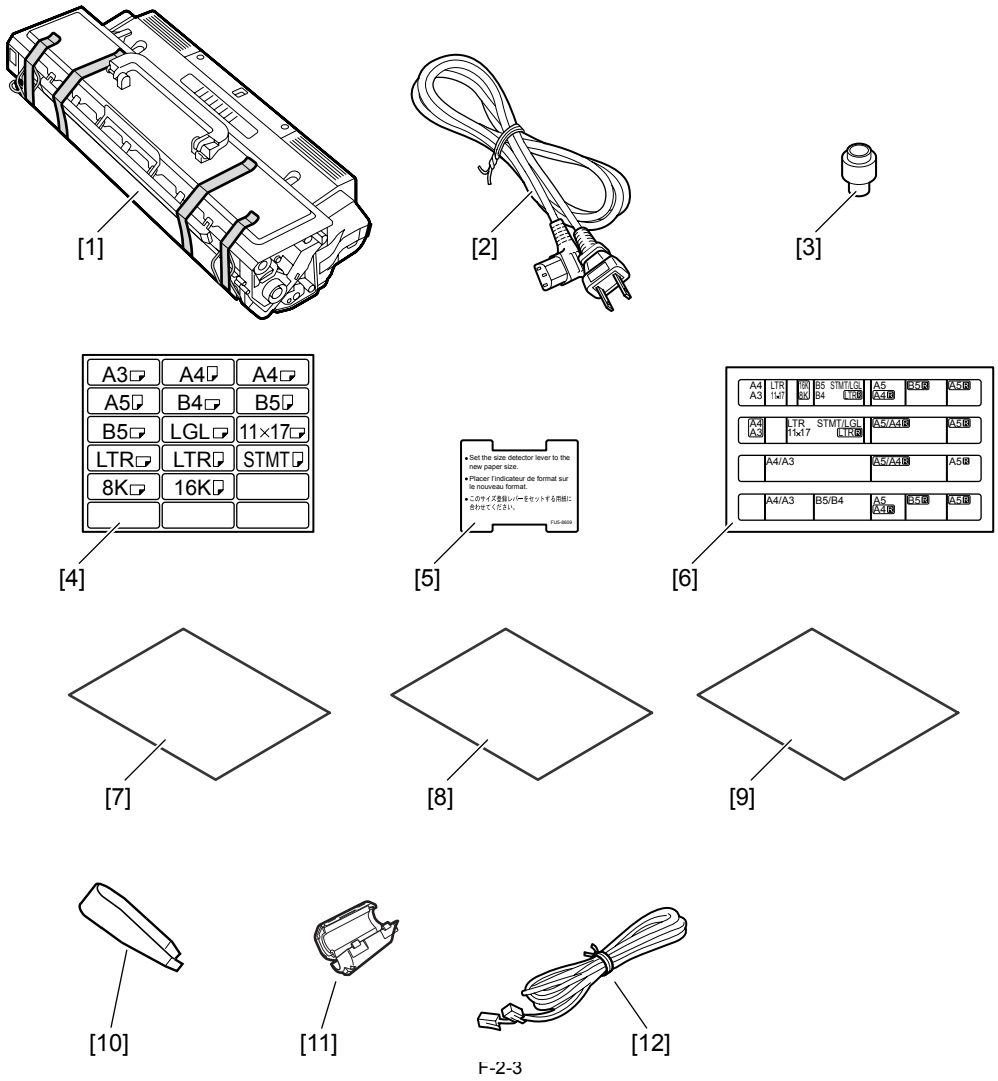
1-1 Points to Make Before Installation
Be sure to go through the following before starting the work:
1) If you are installing the machine after moving it from a cold to warm location, be sure to leave the machine unpacked for at least 2 hours so that the machine is

fully used to the site temperature, thus avoiding image faults caused by condensation. (The term "condensation" refers to the formation of droplets of water on the surface of a metal object brought in from a cold to warm place, i.e., as the result of the rapid cooling of the moisture (vapor) around the object.)

2) The machine weighs a maximum of about 58 kg. Be sure to work in a group of 2 persons when lifting it.

1-2 Checking the Contents

Check to be sure that none of the following contents is missing:



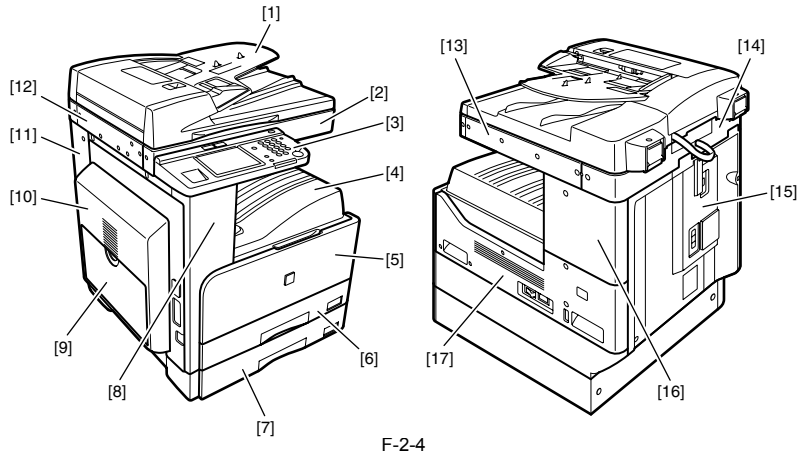
F-2-3

[1]	Toner cartridge	---1	[7]	Main unit warranty card	---1
[2]	Power cable	---1	[8]	Registration card	---1
[3]	Stamp ink cartridge	---1	[9]	Cartridge warranty	---1
[4]	Cassette size label	---2	[10]	Tweezers	---1
[5]	Caution sheet	---2	[11]	Ferrite core	---1
[6]	Document size label	---1	[12]	Telephone cord	---1

Check the documentation and CD against the following table:

Operators manual: Starter Guide
Operators manual: Basic Guide
Operator manual CD-ROM
Driver/Utility CD-ROM

1-3 Names of Parts



F-2-4

[1]	DADF	[10]	Left door
[2]	Reader front cover	[11]	Left cover (rear)
[3]	Control panel	[12]	Reader left cover
[4]	Delivery tray	[13]	Reader right cover
[5]	Front cover	[14]	Reader rear cover
[6]	Cassette 1	[15]	Rear cover
[7]	Cassette 2	[16]	Right cover (upper)
[8]	Left cover (front)	[17]	Right cover (lower)
[9]	Manual feed tray		

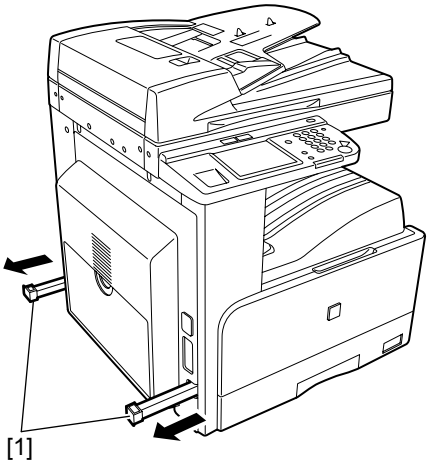
2.2 Unpacking and Installation

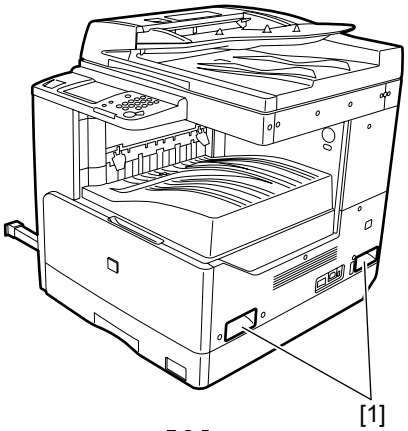
2.2.1 Unpacking and Removing the Packaging Materials

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Unpack the machine and remove vinyl, cushioning materials, and tape.
2) Hold the handles [1] of the machine together with one or more persons and take it out.

> ⚠ The maximum weight of this machine is approximately 53kg. Two or more persons are required to lift the machine.



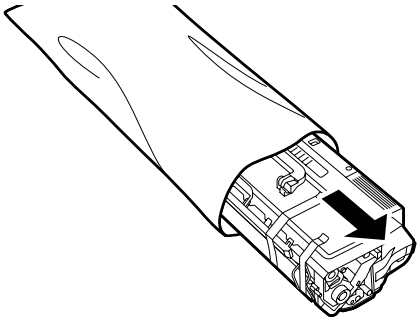


F-2-5

2.2.2 Installing the Toner Cartridge

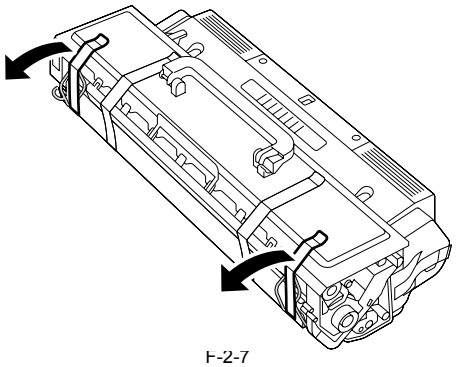
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Remove the cartridge from the bag.



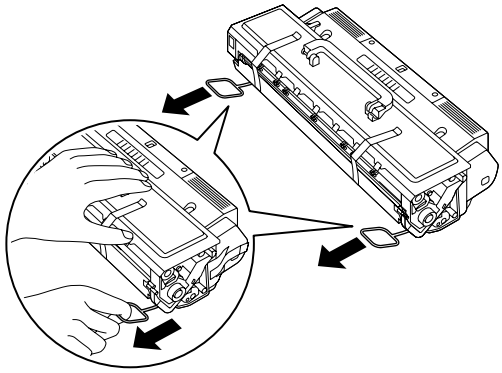
F-2-6

2) Remove the short shipping tape.



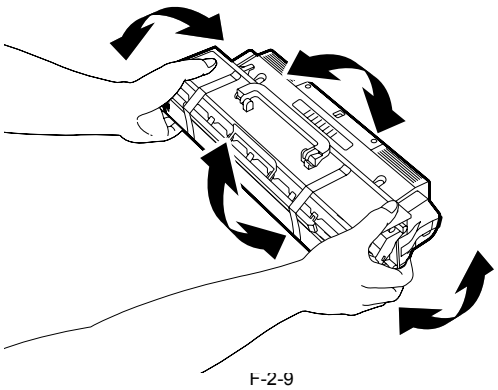
F-2-7

3) Remove the packing materials.



F-2-8

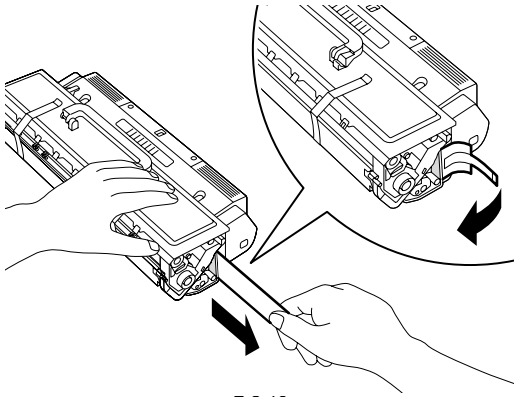
4) Gently rock the cartridge several times to distribute toner inside.



F-2-9

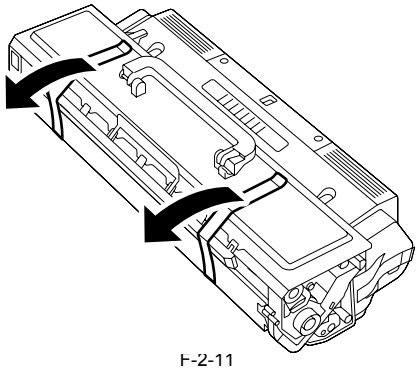
5) Pull out the seal completely.

> ⚠ Do not pull out the seal at an angle.



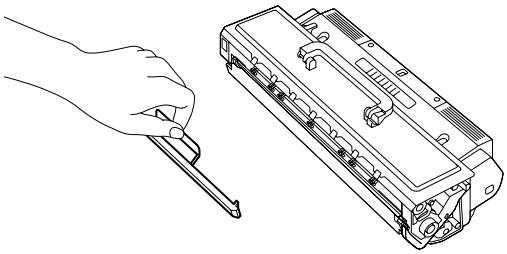
F-2-10

6) Remove the long shipping tape.



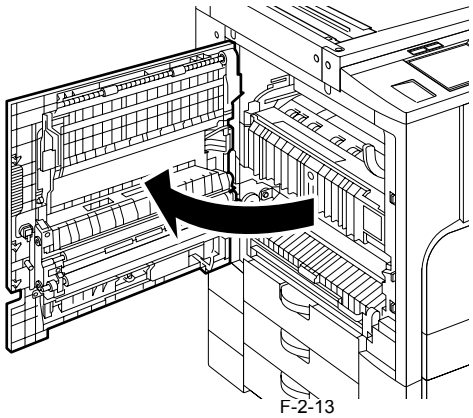
F-2-11

7) Remove the protective cover.



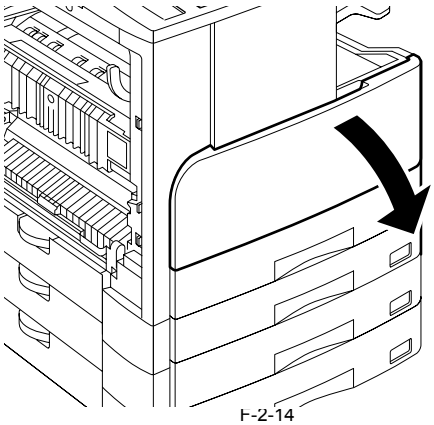
F-2-12

8) Push the release button on the left cover of the main unit to open the left cover.



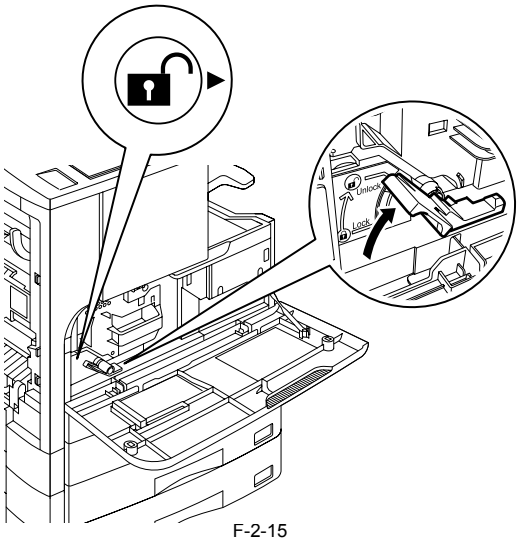
F-2-13

9) Open the front cover.



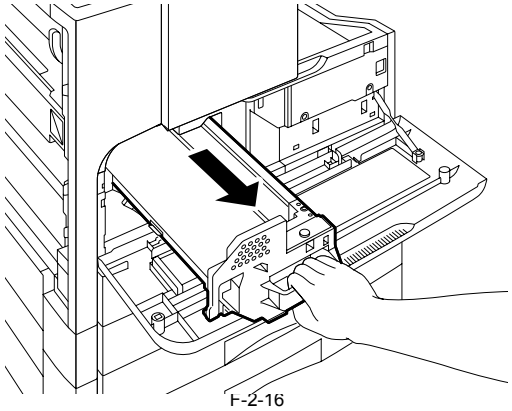
F-2-14

10) Rotate the lever to the unlocked position.



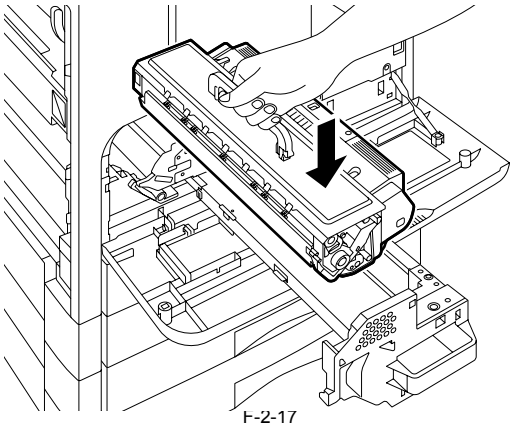
F-2-15

11) While grasping the handle of the cartridge holder, pull the cartridge holder out of the machine until it stops.



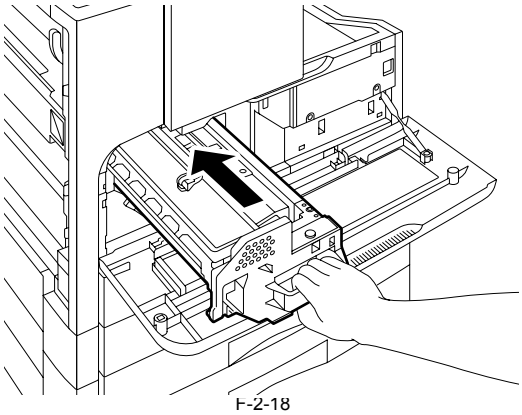
F-2-16

12) Hold the cartridge by its handle, then insert it into the cartridge holder.



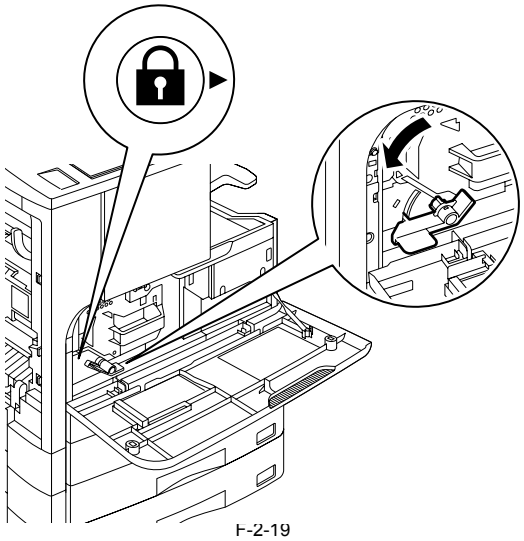
F-2-17

13) Push the cartridge holder in the machine as far as it will go.



F-2-18

14) Rotate the lever to the locked position.



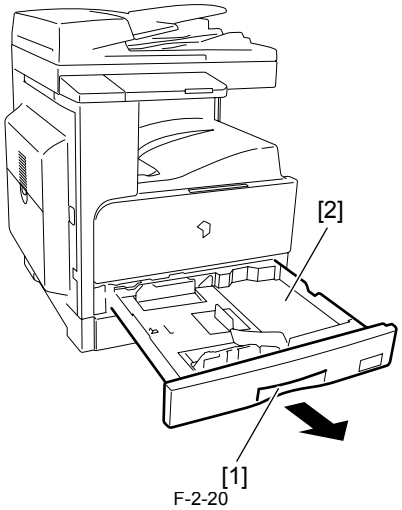
F-2-19

15) Close the front cover.
16) Gently close the left cover until it clicks.

2.2.3 Setting the Cassettes

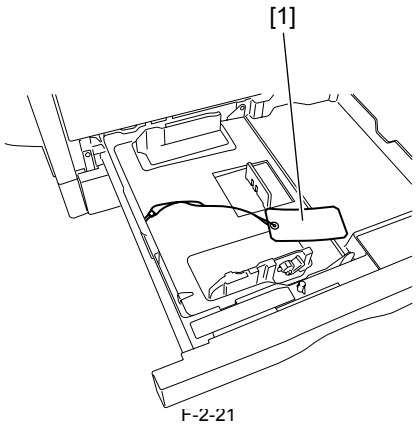
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Holding the knob [1] at the center of the cassette, draw out the cassette [2] until it stops.



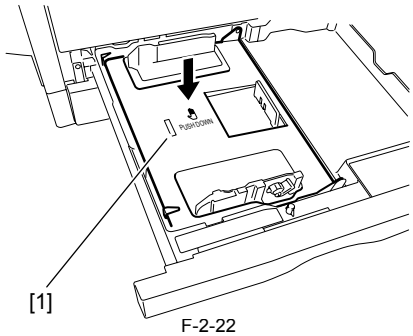
F-2-20

2) Remove the wire [1] securing the inner plate of the cassette.



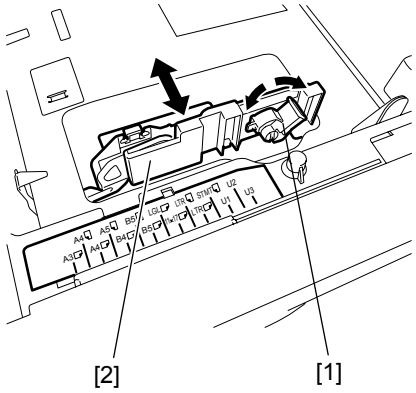
F-2-21

3) Press the "PUSH DOWN" mark [1] on the inner plate to lock it into the cassette.



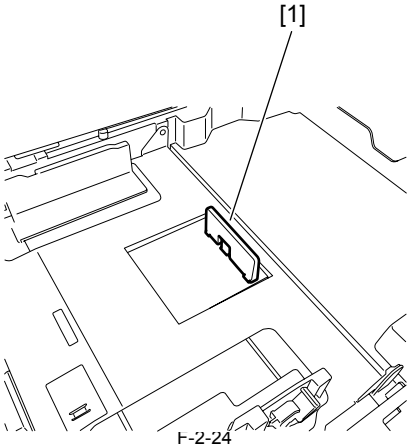
F-2-22

4) Turn the lever [1] of the paper front guide counterclockwise to release it. Slide the paper front guide [2] to fit to the size of the paper to be used, and then turn the lever clockwise to lock it.



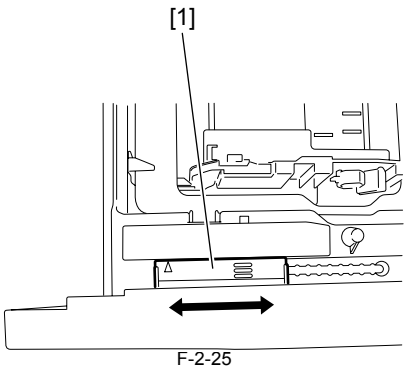
F-2-23

5) Turn the paper trailing edge registration plate [1] to the left to remove it. Re-attach it to fit to the size of the paper to be loaded.



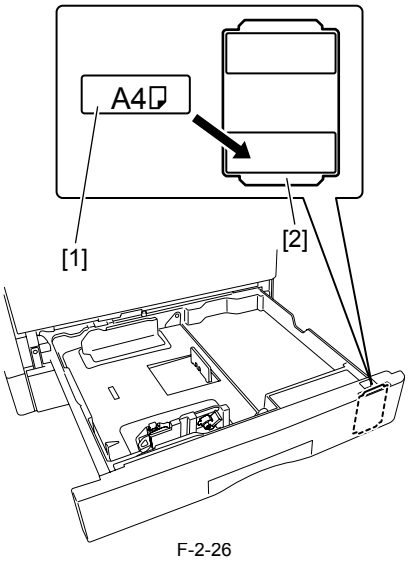
F-2-24

6) Slide the paper size detection lever [1] to fit to the paper size.



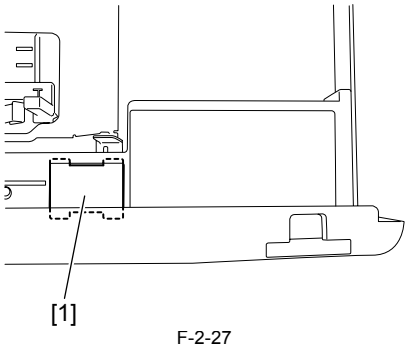
F-2-25

7) Affix the cassette size label [1] to the paper size indication plate [2].



F-2-26

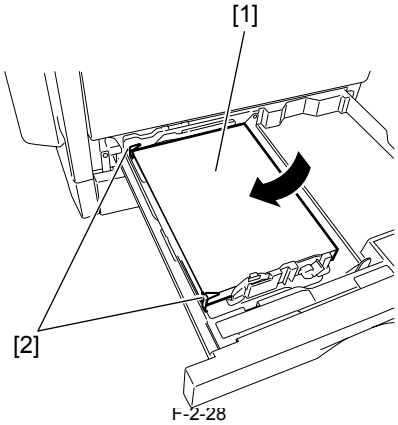
8) Affix the caution sheet printed in an appropriate language.



F-2-27

9) Align the left, right, and leading edges of sheets and load the stack of paper [1] in the cassette. Make sure that the paper is below the claws [2] of the cassette.

MEMO:
Inserting the cassette into the machine with the inner plate locked into the cassette will unlock the inner plate automatically. If the inner plate is not locked, press the "PUSH DOWN" mark on the inner plate to lock it into the cassette and then load paper.



F-2-28

10) Holding the knob at the center of the cassette, insert the cassette in the machine it stops.

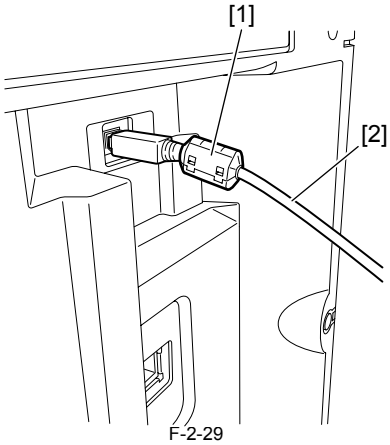
2.2.4 Attaching the Ferrite Core

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The installation of the ferrite core does only for the model equipped with the printer function.

1) Attach the ferrite core [2] to the user's USB cable, and then connect the USB cable to the USB port of the host machine.

To reduce noise, attach the ferrite core as close to the USB port of the host machine as possible.



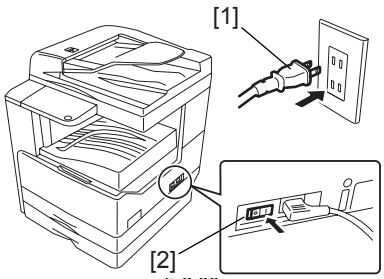
F-2-29

2.2.5 Checking the Image Quality

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Plug the power cord into the outlet, and then turn on the main power switch [2].

> ⚠ Use the specified power supply (rated voltage -/+10% and rated current).



F-2-30

2) Place a document on the document glass, take a copy of it by supplying paper from the cassette or manual feed tray, and check the printed image. Also perform the following checks:
- Check whether abnormal sound is heard.
- Check the printed images at all preset magnifications.
- Check whether the document is copied normally on the specified number of sheets.

2.2.6 Setting the Date and Time

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

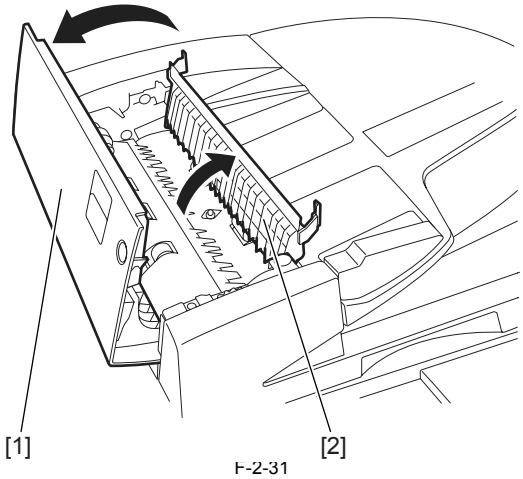
1) Press ✳ keys to display the user mode screen.
2) Select "TIMER SETTINGS" and then press the OK.
3) Select "DATE&TIME SETTING", and then press the OK. The set date and time appears.
4) Enter the current date and time with the ten keys.
5) Press the OK to allow the entered date and time to take effect.

2.2.7 Attaching Other Parts

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

a. Stamp

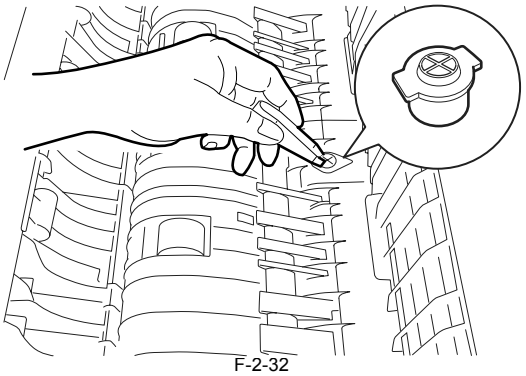
1) Open the paper feeder cover and jam handling cover of DADF.



F-2-31

2) Install the stamp using tweezers or the like.

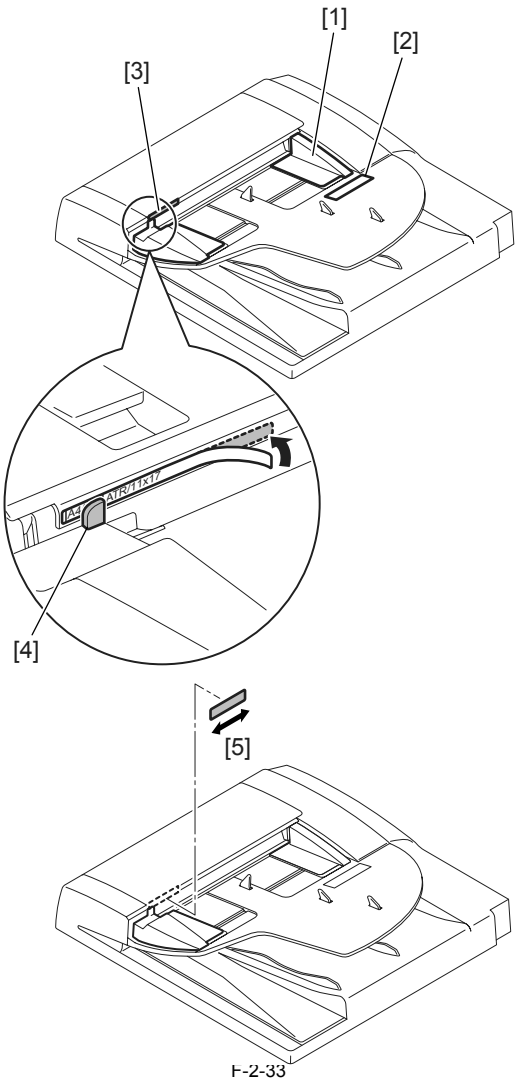
> ⚠ A loosely installed stamp will cause a paper jam. Push the stamp all the way in until it clicks.


F-2-32

b. Document size label

The purpose of this label is to facilitate the size adjustment made from the view point of each user.

1) Align the side guide (rear) [1] to "A4/A3" "LTR/11X17" [2].
2) Affix the label of the series matching the document size label [3] to the feeder cover.
   Adjust the label position by moving it back and forth (in the direction of the arrow [5]) according to the view point of the user so that the indicator [4] on the side guide (front) meets the indicator on the size label, and then affix the label securely.



F-2-33

2.3 Checking the Connection to the Network

2.3.1 Checking the Network Connection

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If the machine supports a network feature, check the network connection following the procedure below.
1) Press the following keys to display the service mode screen:
> 2 Key > 8 Key >
2) Select "# REPORT" using ◀ or ▶, and then press the OK.
3) Select "REPORT OUTPUT" using ◀ or ▶, and then press the OK.
4) Select "SPEC LIST" using ◀ or ▶, and then press the OK.
5) When "SPEC REPORT" is displayed, check that "NETWORK" is set to ON.
6) Contact the system administrator of the customer to make network settings.

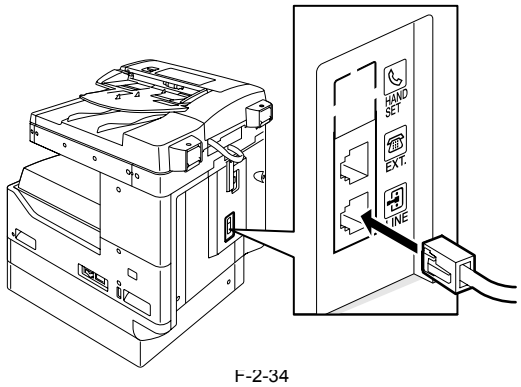
2.4 Connection to Telephone Line

2.4.1 Connecting to the Telephone Line

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Turn off the main power switch of this machine.
2) Connect modular plug at either end of the modular cable to the modular jack (LINE) at the back of the machine, and connect the other modular plug to the modular jack on the wall.

⚠ Use the modular cable supplied with the machine. If you use another modular cable, its length must be within 3 m.



F-2-34

3) Turn on the main power switch.

2.4.2 Basic Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Make the minimum settings required to use the fax feature.
a. Registering the User Telephone Number
> [Communications Settings] > [User Settings (Fax Settings)] > [Uit Telephone #] > Enter the fax No. > [OK]
b. Selecting the Telephone Line Type
> [Communications Settings] > [User Settings (Fax Settings)] > [Tel Line Type] > Select [Pulse] or [Tone]. > [OK]

2.4.3 Communication Test

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

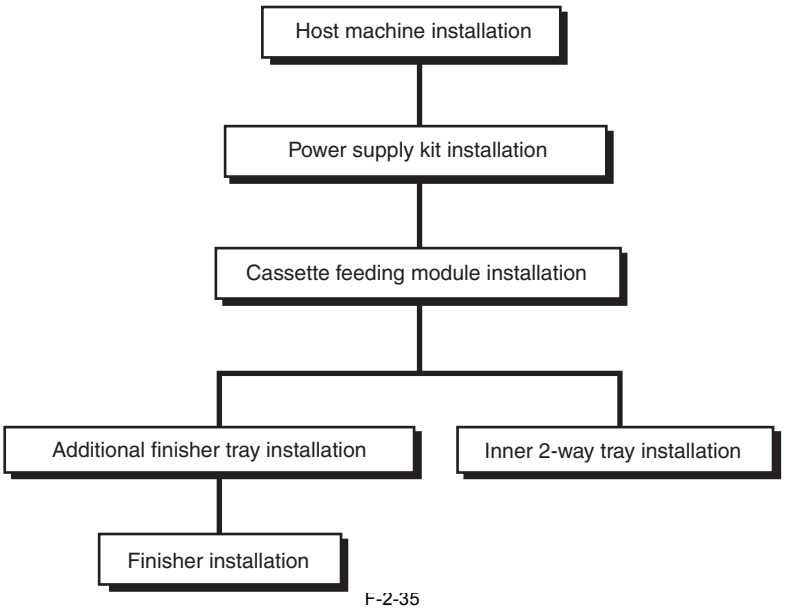
Conduct a communication test to check the fax feature is implemented properly.
1) Using ten keys, enter the telephone number of a called party who allows you to conduct the communication test. Send a test document to check for normal transmission. If the test document cannot be sent normally, check whether the set telephone line type is the same as the type of the telephone line connected to this machine.
2) Ask the called party to send a test document to your to check for normal reception.

2.5 Flow of Accessory Installation

2.5.1 Flow of Accessary Installation

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If you are going to install any accessory after installing the host machine, follow the following flow of work so that the work will become effective.



F-2-35

Chapter 3 Main Controller

Contents

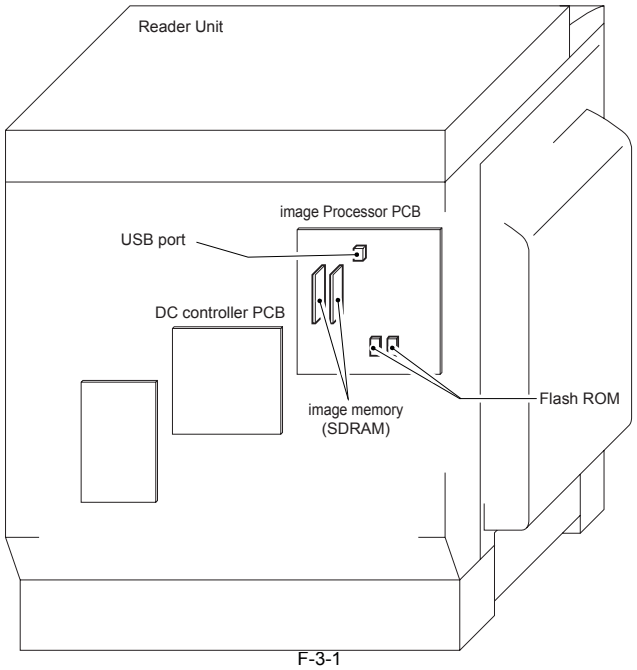
3.1 Overview/Configuration

3.1.1 Construction and Mechanisms

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-3-1

Item	Description
Image Processor PCB	Controls system operation, memory, printer unit output, image processing, printer unit image input processing, card printer unit interface, fax image processing, etc.
Image memory (SDRAM)	Temporarily retains image data (128 MB; 256 MB max.)
Flash ROM	Stores system software and retains user data/service data
USB port	USB2.0 interface

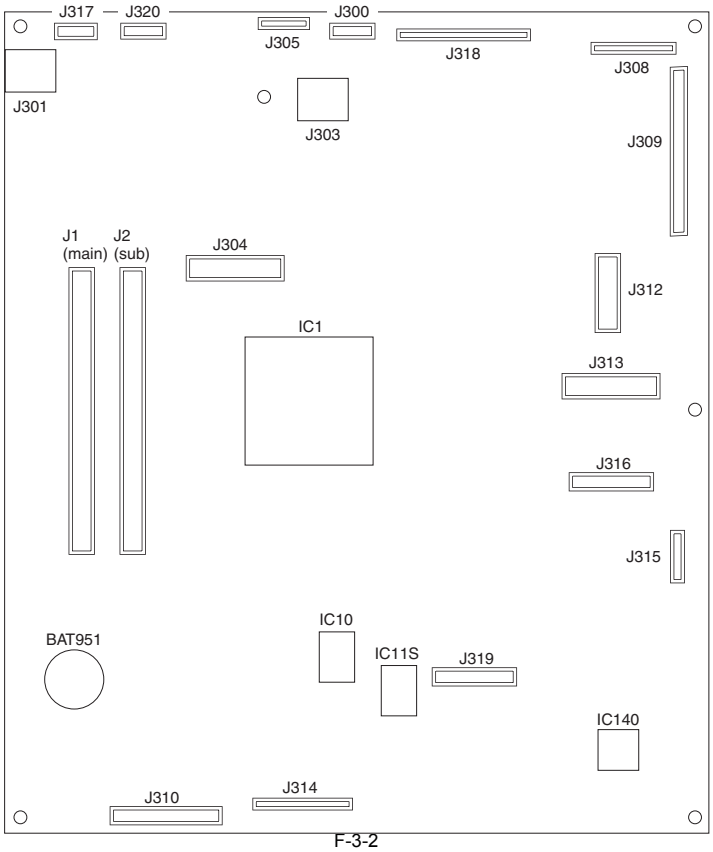


F-3-1

3.2 Outline of the Electrical Circuitry

3.2.1 Image Processor PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-3-2

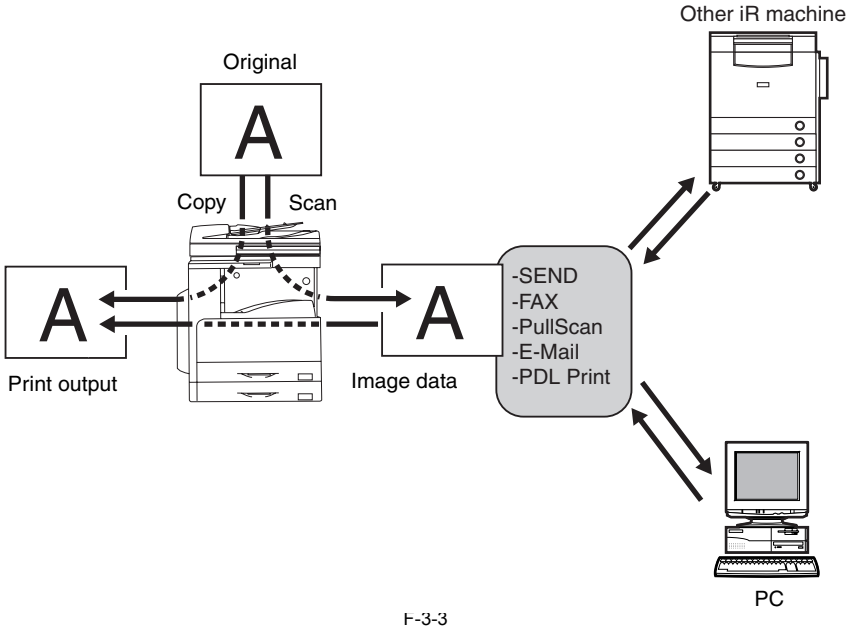
T-3-2

Connector	Description
J300	SERIAL (RS-232C) PCB connection slot
J301	USB memory connection slot
J303	USB port
J304	LAN PCB connection slot
J305	Not used
J308	Reader ADF connection slot
J309	Reader Book connection slot
J310	Power supply connection slot
J312	SERIAL PCB connection slot
J314	DC controller PCB connection slot
J315	SOFT ID PCB connection slot
J316	SOFT counter PCB connection slot
J317	New Card Reader connection slot
J318	Control panel connection slot
J319	Extend ROM PCB connection slot
J320	Not used
J1	DDR DIMM PCB connection slot (main)
J2	DDR DIMM PCB connection slot (sub)

3.3 Image Processing

3.3.1 Overview of the Image Flow

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

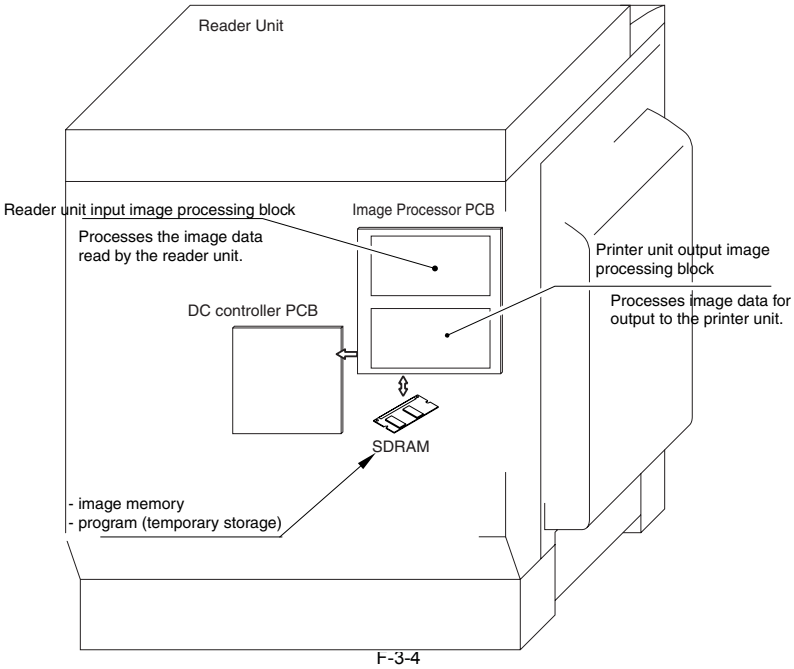


F-3-3

3.3.2 Construction of the Image Processing Module

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine's major image processing is executed by the image processor PCB.
The following shows the construction of the modules associated with image processing:

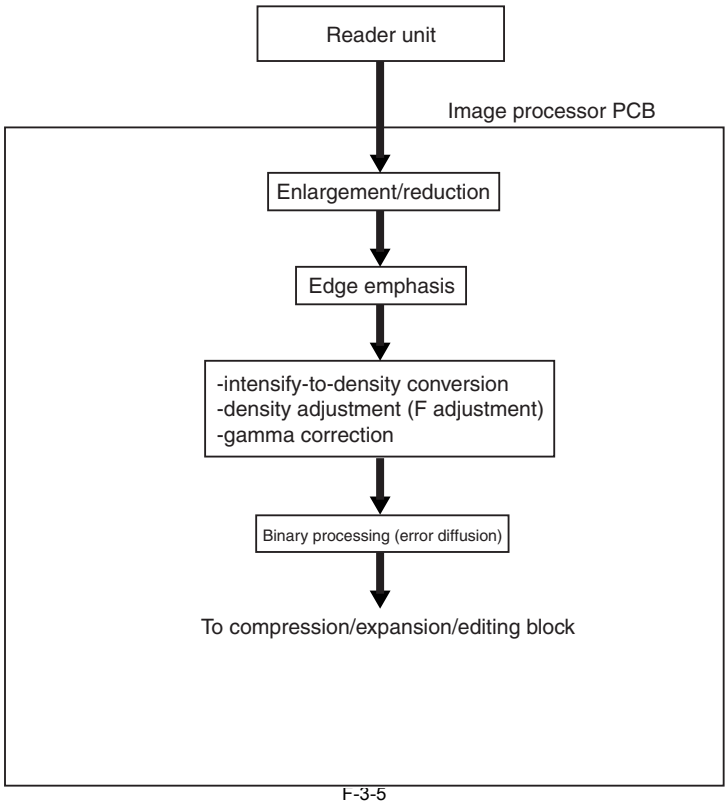


F-3-4

3.3.3 Reader Unit Input Image Processing

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The image data colleted by the contact image sensor is processed by the Image processor PCB.

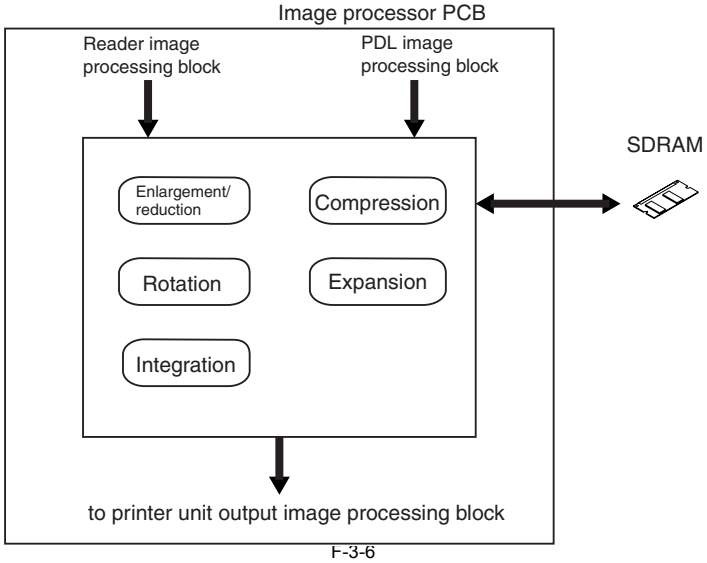


F-3-5

3.3.4 Compression/ Extesion/ Editing Block

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Here, image data is processed for compression, extension, and editing.

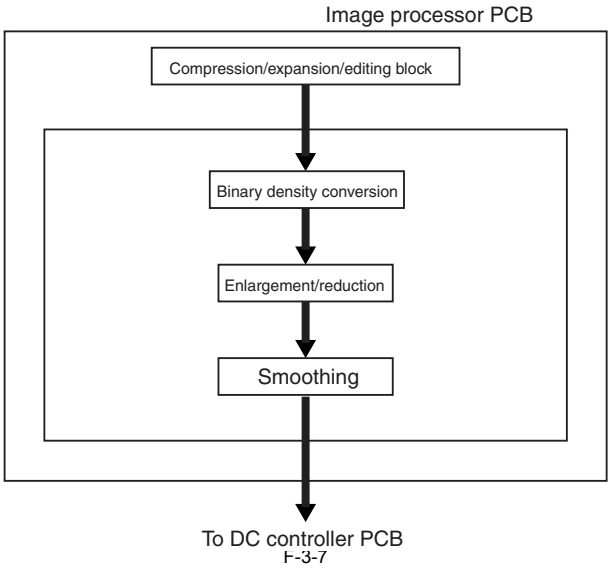


F-3-6

3.3.5 Printer unit Output Image Processing

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The image processor PCB processes the image data coming from the reader unit for output to the printer unit.

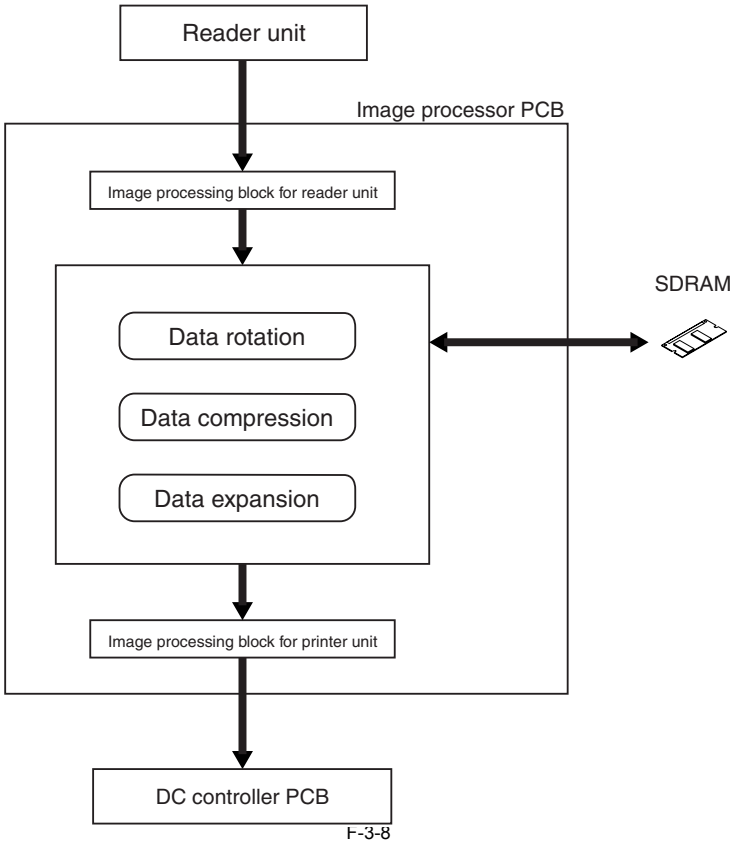


F-3-7

3.4 Image Data Flow

3.4.1 Flow of Image Data According to Copy Functions

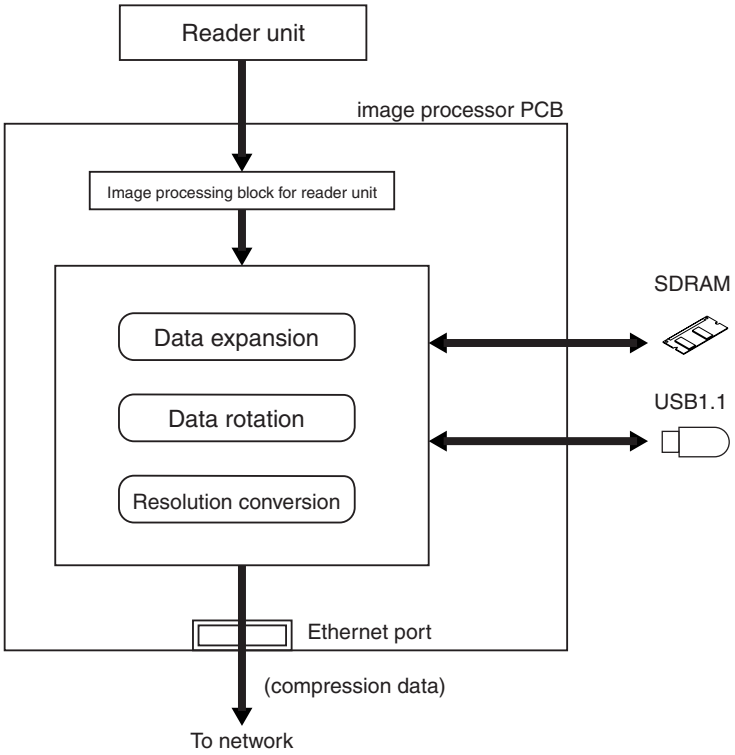
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-3-8

3.4.2 Flow of Image Data for the SEND Function

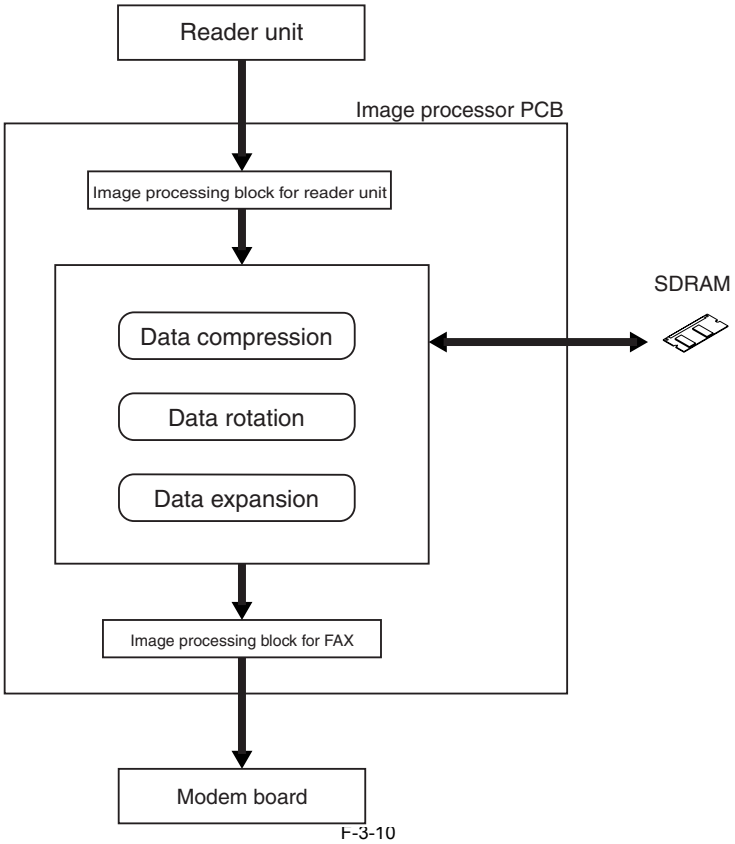
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-3-9

3.4.3 Flow of Image Data for the Fax Transmission

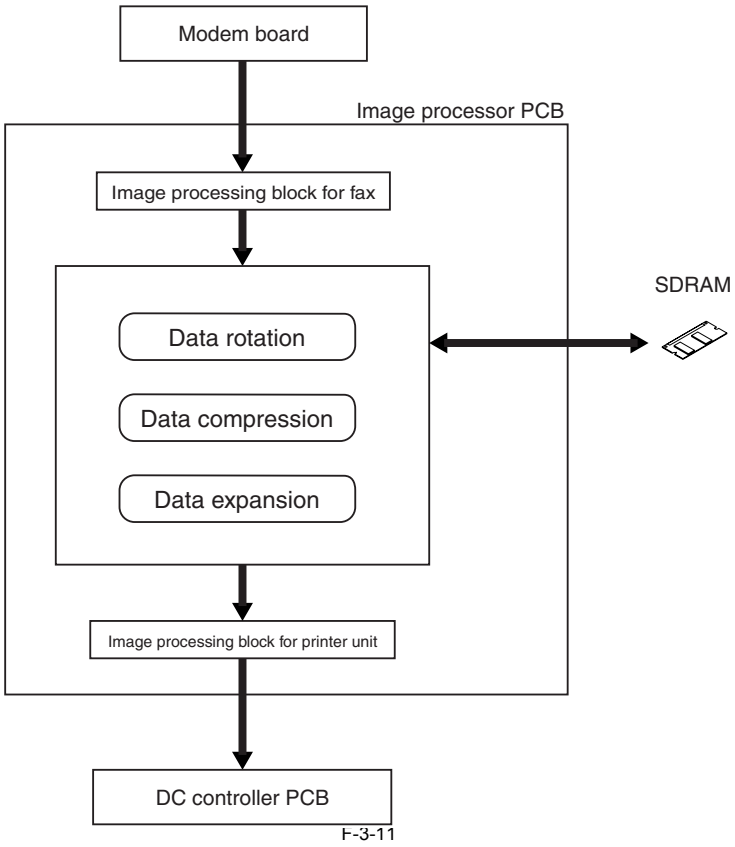
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-3-10

3.4.4 Flow of Image Data for the Fax Reception Function

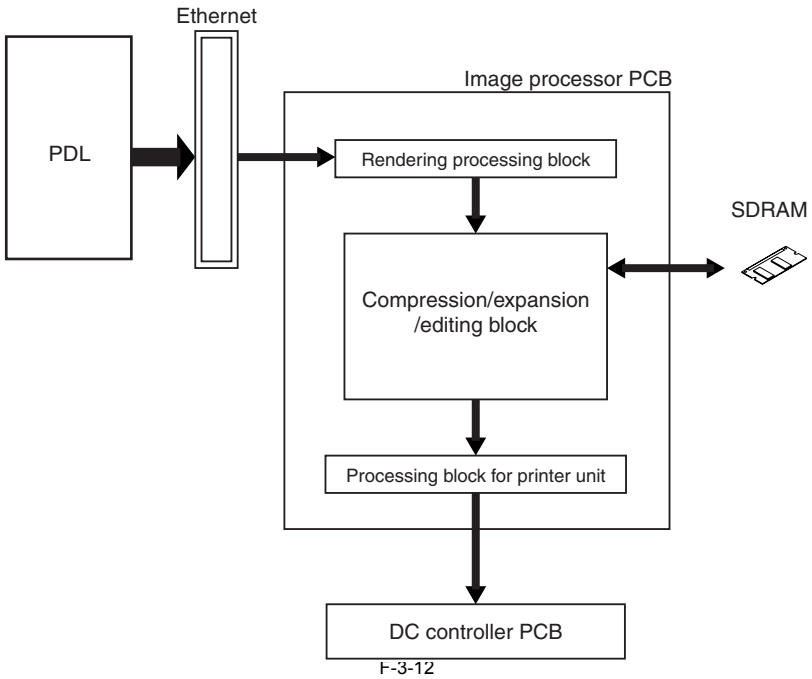
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-3-11

3.4.5 Flow of Image Data for the PDL Function

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-3-12

3.5 Parts Replacement Procedure

3.5.1 Main Controller PCB

3.5.1.1 Preparation for Removing the Image Processor PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

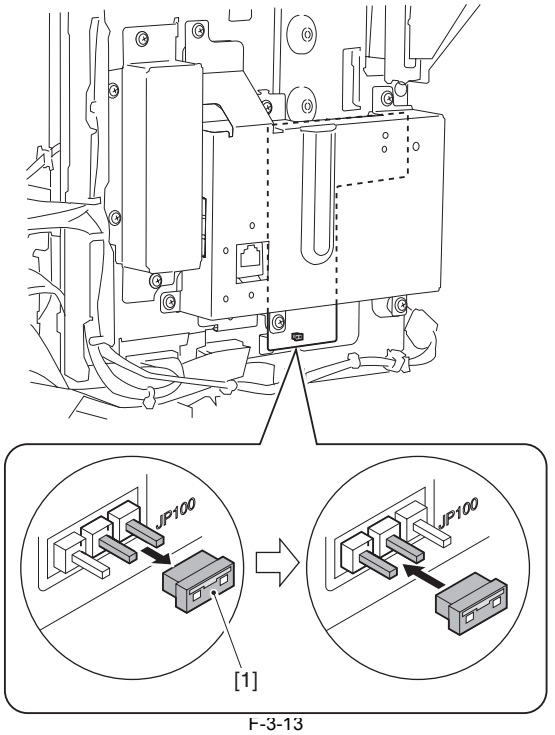
1) Detach the rear cover.
2) Detach the rear left cover.

3.5.1.2 Removing the Image Processor PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Change the position of the jumper plug (JP100) [1] on the modem PCB (capacitor PCB).

⚠
If disconnecting/connecting the modem PCB (capacitor PCB) without implementing this operation, the SDRAM may be broken.

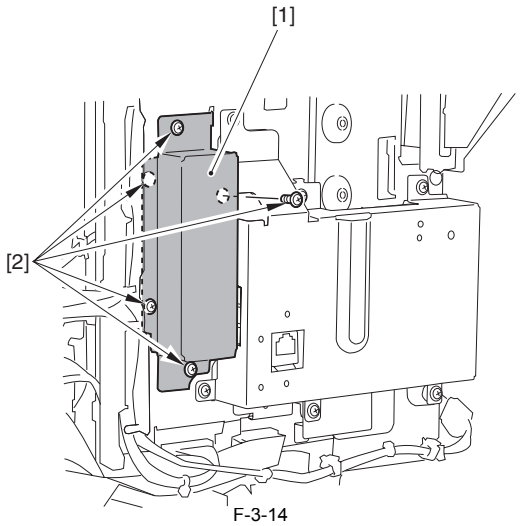


F-3-13

⚠
When turning off the main power switch and disconnecting the power plug from the power outlet, the power is supplied between the SDRAM and the super capacitor for image memory backup.
If the jumper plug (JP100) is disconnected with the image being backed up, the contents in the memory are all cleared. Be sure to output all data in the memory before disconnecting the jumper plug (JP100).

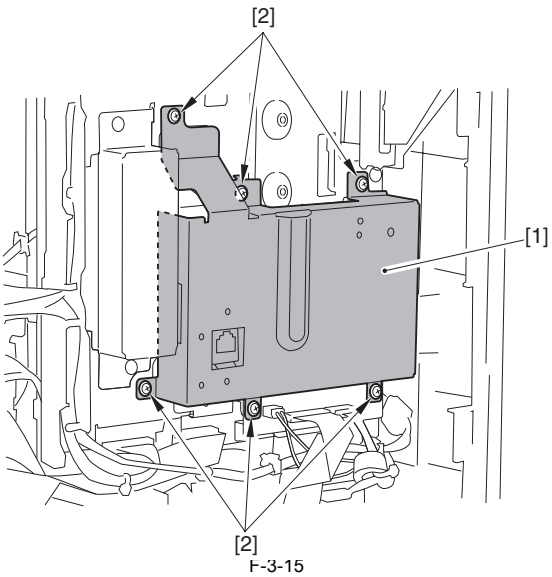
MEMO:
The jumper plug is small. A needlenose pliers or tweezers may be useful in this operation. To prevent short-circuit, avoid contact of the jumper pin to a nearby metal through the tool.

2) Detach the RAM cover [1].
- 5 screws [2]



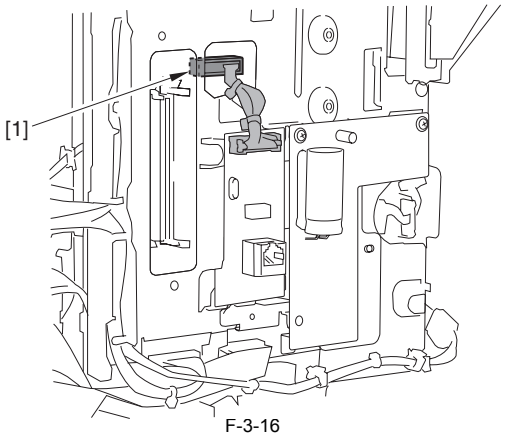
F-3-14

3) Detach the SDRAM. (page 3-11)Reference[Removing the SDRAM]
4) Detach the LAN cover [1].
- 6 screws [2]



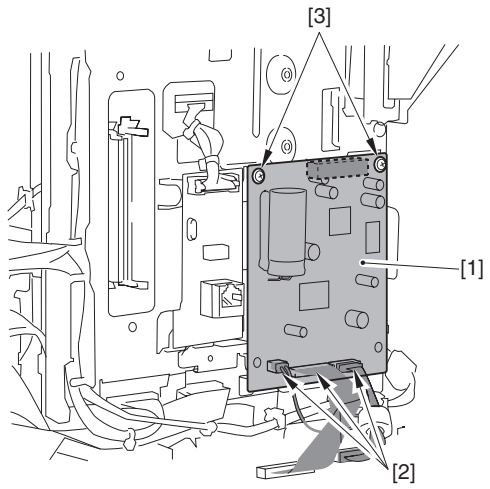
F-3-15

5) Disconnect the connector [1] of the IP-LAN cable.



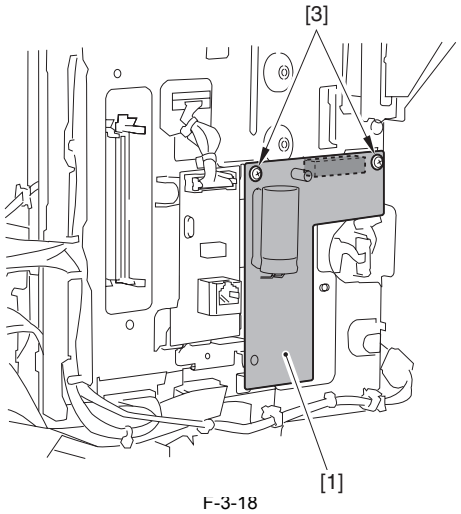
F-3-16

6) Detach the modem PCB or the capacitor PCB [1].
In the case of the modem PCB
- 3 connectors [2]
  - 2 screws [3]



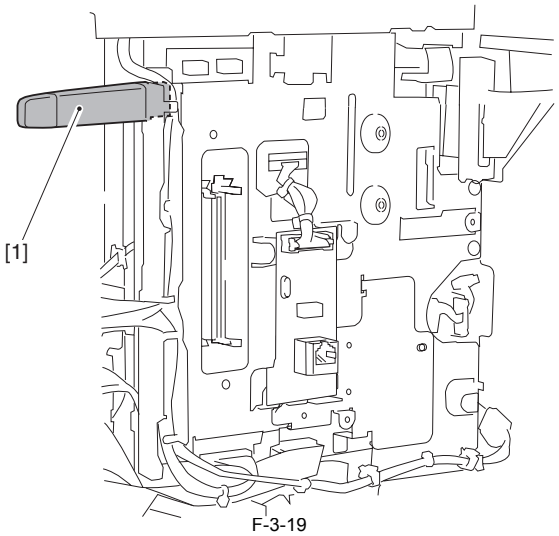
F-3-17

In the case of the capacitor PCB
- 2 screws [3]



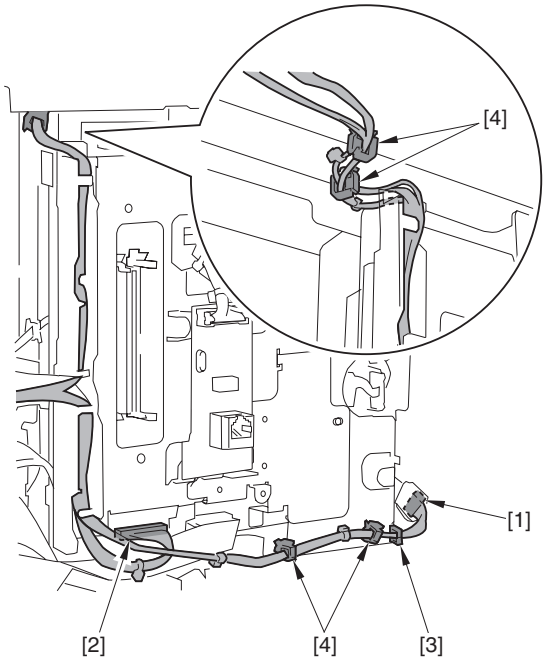
F-3-18

7) Disconnect the USB memory [1].



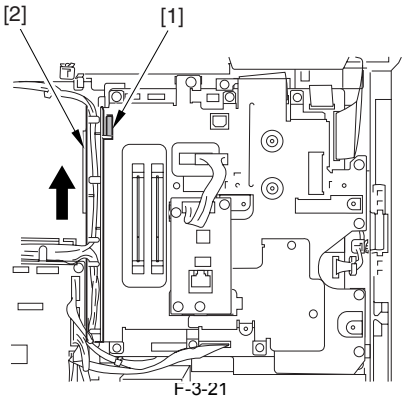
F-3-19

8) Free the relay cable [1] and disconnect the connector [2].
- 1 edge saddle [3]
  - 4 wire saddles [4]



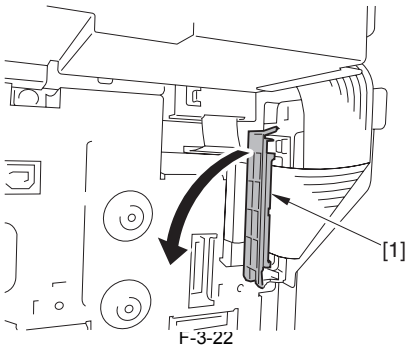
F-3-20

9) Detach the cable guide [2] in the upward direction.
- 1 claw [1]



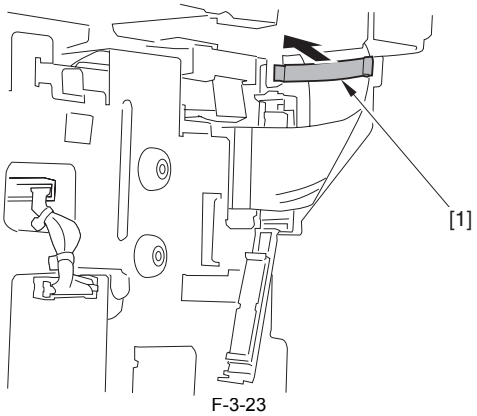
F-3-21

10) Open the core [1].



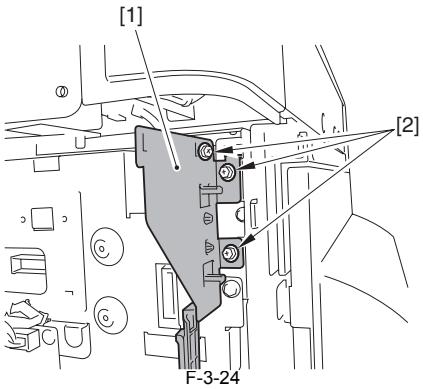
F-3-22

11) Detach the cable retainer [1].



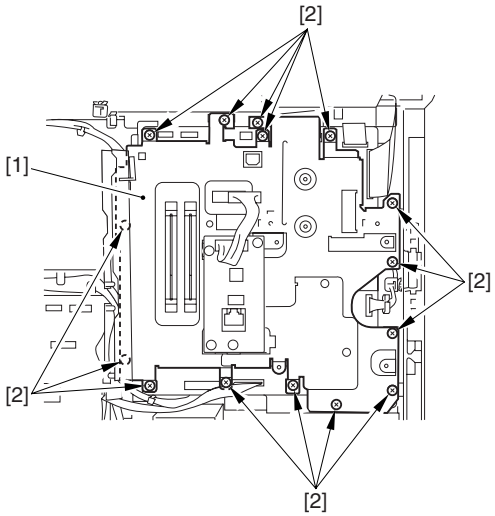
F-3-23

12) Detach the flexible cable guide [1].
- 3 screws [2]



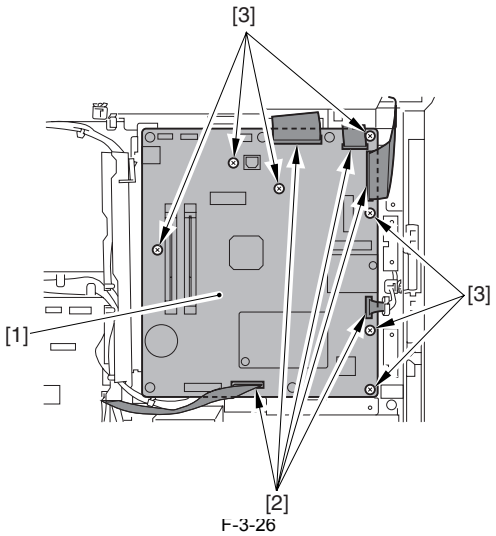
F-3-24

13) Detach the IP cover [1].
- 15 screws [2]



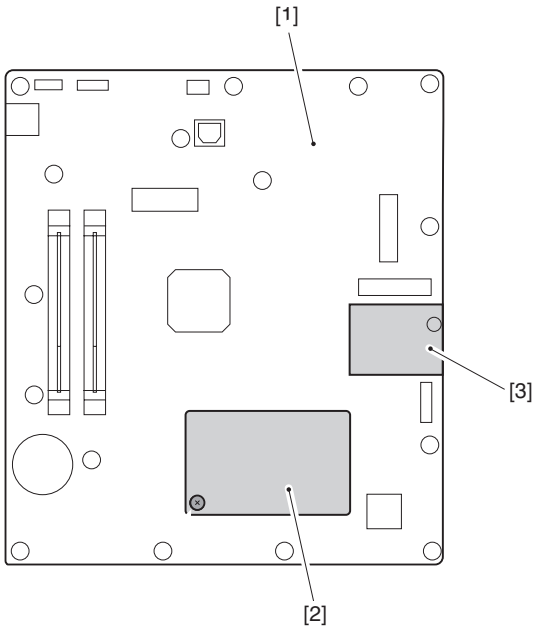
F-3-25

14) Detach the image processor PCB [1].
- 5 connectors [2]
- 7 screws [3]



F-3-26

If the image processor controller PCB [1] must be replaced, be sure to transfer the following from the old to new PCB:
- SEND PCB [2]
- Counter PCB [3]



F-3-27

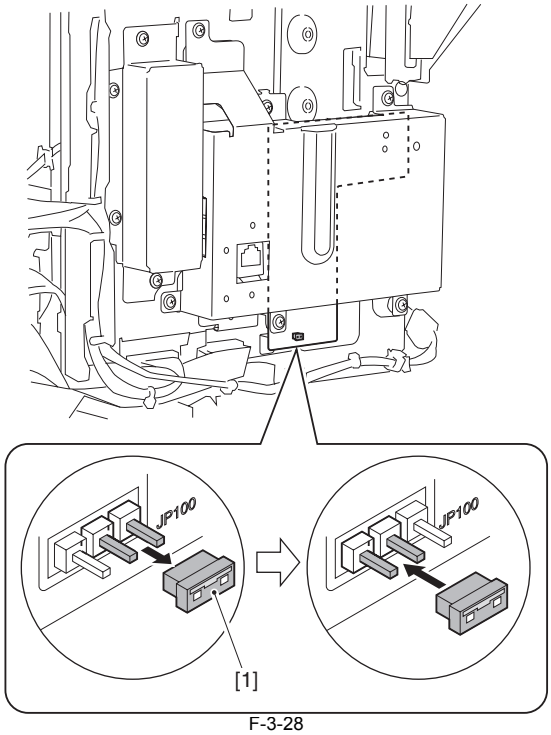
3.5.2 SDRAM

3.5.2.1 Preparation for Removing the SDRAM

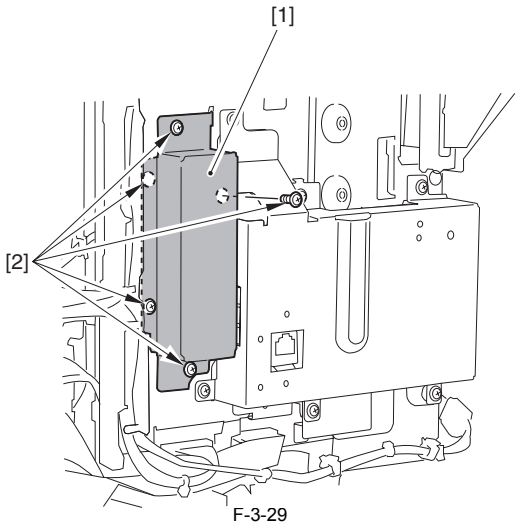
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Change the position of the jumper plug (JP100) [1] on the modem PCB (capacitor PCB).

If disconnecting/connecting the modem PCB (capacitor PCB) without implementing this operation, the SDRAM may be broken.



F-3-28

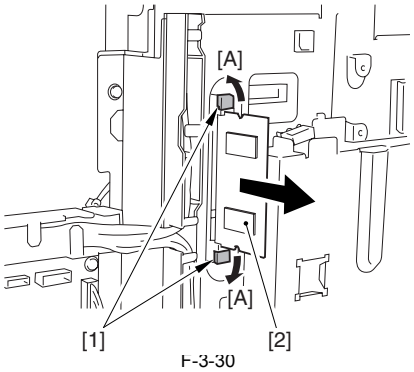


F-3-29

3.5.2.2 Removing the SDRAM

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Release two lock levers [1] in the direction of arrow [A] and remove SDRAM [2].



F-3-30

When turning off the main power switch and disconnecting the power plug from the power outlet, the power is supplied between the SDRAM and the super capacitor for image memory backup.
If the jumper plug (JP100) is disconnected with the image being backed up, the contents in the memory are all cleared. Be sure to output all data in the memory before disconnecting the jumper plug (JP100).

MEMO:
The jumper plug is small. A needlenose pliers or tweezers may be useful in this operation. To prevent short-circuit, avoid contact of the jumper pin to a nearby metal through the tool.

3) Detach the RAM cover [1].
- 5 screws [2]

Chapter 4 Original Exposure System

Contents

4.1 Basic Constraction

4.1.1 Specifications, Control Methods, and Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Major specifications, control methods, and functions of the original exposure system are summarized below.

T-4-1

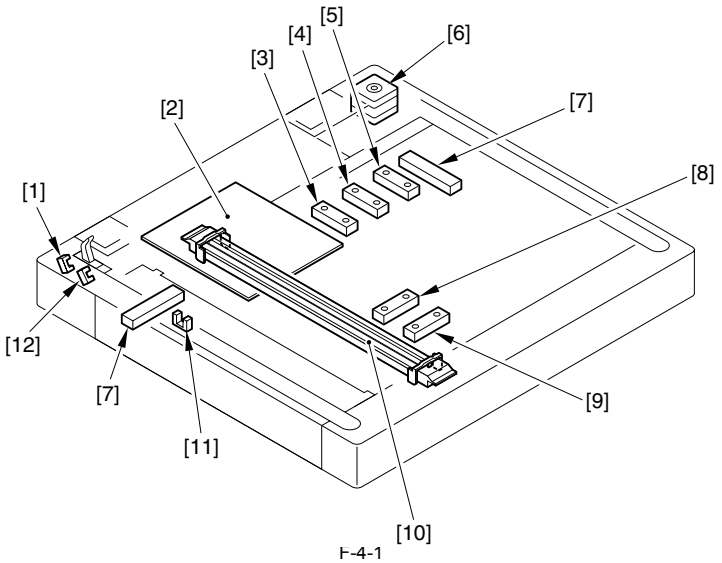
Item	Function/Method
Exposure light source	LED
Original scan	In BOOK mode: Original scan is performed by moving the contact image sensor (CIS). When ADF is used: Original stream reading is performed with the contact image sensor (CIS) fixed.
Scan resolution	600 dpi (vertical scan) x 600 dpi (horizontal scan) (Color send: 300 dpi horizontal scan)
Gradation	256
Carriage position detection	Contact image sensor (CIS) HP sensor (SR401)
Magnification range	50% to 200% Vertical scan direction: Image processing is by image processor PCB Horizontal scan direction: BOOK mode: Carriage movement speed change and image processing by image processor PCB *1 ADF mode: Original feed speed change and image processing by image processor PCB *1
Lens	Rod lens array
CMOS sensor	Number of lines: 1 Number of pixels: Total 7488 (incl. 7176 effective pixels) Maximum original scan width: 304 mm
CIS drive control	Drive control by reader motor (M401)
Original size detection	[1] BOOK mode: Vertical scan direction: Detection by reflection type sensor (AB/INCH) Horizontal scan direction: Detection by reflection type sensor (AB/INCH) [2] When ADF is used Width: Detection by original width sensor PCB in ADF Length: Detection by photo sensor in ADF

*1 The control method depends on the magnification. For more details, refer to "Magnification Change".

4.1.2 Major Components

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Major components of the original exposure system are as follows:



F-4-1

T-4-2

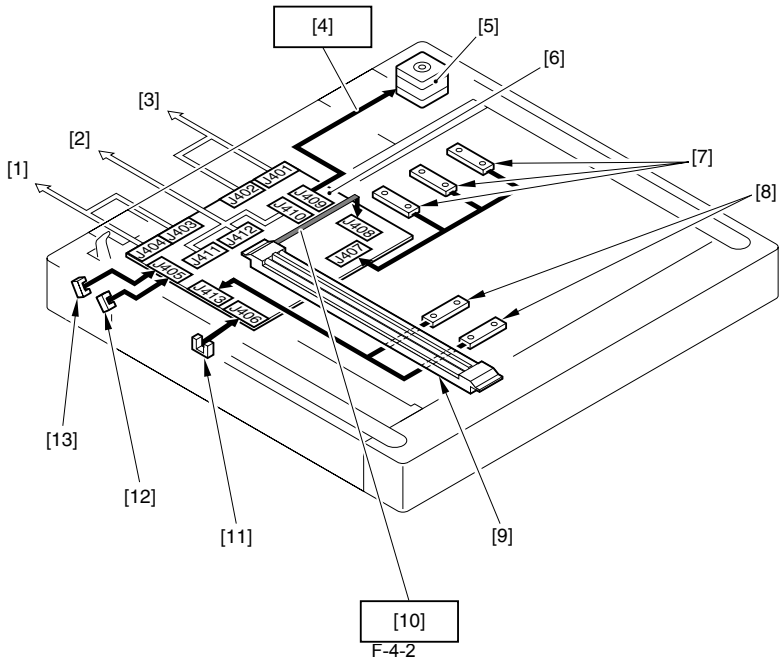
	Component	No.	Function/Specification
[1]	Copyboard cover open/close sensor (Rear: SR402)	SR402	Photo interrupter: Detects the copyboard cover open/close status. Starts detecting the original size when the copyboard cover angle is 30 deg.
[2]	Reader controller PCB	-	Controls drive of the reader unit and image processing.
[3]	Original sensor 3	SR406	Detects the original size (for all destinations).
[4]	Original sensor 4	SR407	Detects the original size (AB, INCH/AB).
[5]	Original sensor 5	SR408	Detects the original size (INCH/A)
[6]	Reader motor	M401	Pulse motor: Controls drive of the carriage.
[7]	Reader heater*1	-	Prevents condensation inside the original glass.
[8]	Original sensor 1	SR404	Detects the original size (AB, INCH/A, INCH/AB).
[9]	Original sensor 2	SR405	Detects the original size (AB, A, INCH/AB)
[10]	Contact image sensor (CIS)	-	Uses LEDs for indirect exposure (LED + Photoconductor)
[11]	CISHP sensor	SR401	Photo interrupter: Detects the CIS position.
[12]	Copyboard cover open/close sensor	SR403	Finishes detecting the original size when the copyboard cover angle is 5 deg.

*1 Service parts setting

4.1.3 Control System Configuration

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The control system configuration of the original exposure system is shown below.



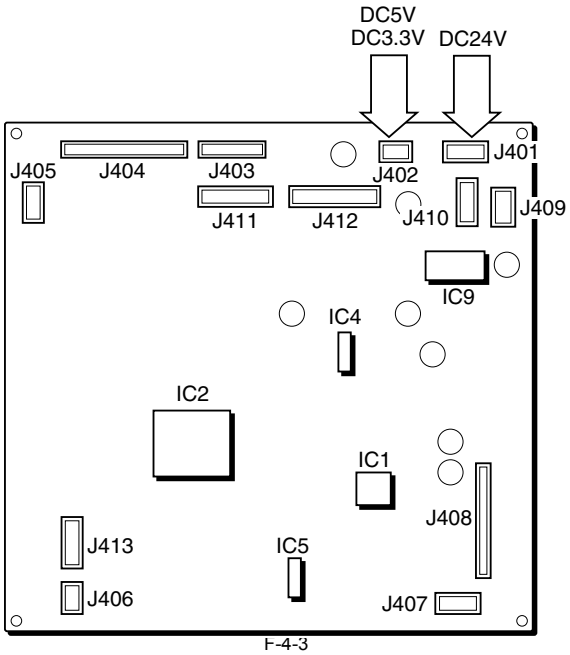
F-4-2

[1] Printer main body (Connected to the image processor PCB)
[2] Connected to ADF
[3] Connected to the power supply PCB
[4] Reader motor drive control
[5] Reader motor (M401)
[6] Reader controller PCB
[7] Original sensor (horizontal scan direction)
[8] Original sensor (vertical scan direction)
[9] Contact image sensor
[10] Image signal
[11] CISHP sensor (PS503)
[12] Copyboard cover open/close sensor (Front: SR403)
[13] Copyboard cover open/close sensor (Front: SR402)

4.1.4 Reader Controller PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The functional configuration of the reader controller PCB is shown below.



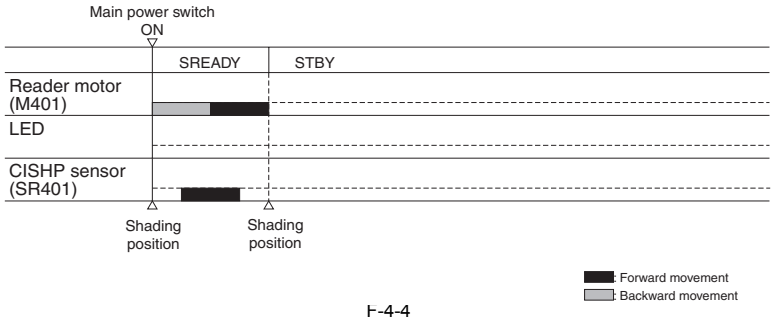
F-4-3
T-4-3

Jack No.	Function
J401	Supplies power (24 VDC) from the main body (printer).
J402	Supplies power (5 VC, 3.3 VDC) from the main body (printer).
J403	Communicates with the main body (printer) (to control the ADF).
J404	Communicates with the main body (printer).
J405	Connected to the copyboard open/close sensor.
J406	Connected to the contact image sensor (CIS) HP sensor.
J407	Connected to the original sensor 1 and original sensor 2.
J408	Connected to the contact image sensor (CIS).
J409	Connected to the reader motor.
J410	Supplies power to the ADF.
J411	Communicates with the ADF (to drive the sensor).
J412	Communicates with the ADF (to drive the motor).
J413	Connected to the original sensor 3, original sensor 4, and original sensor 5.

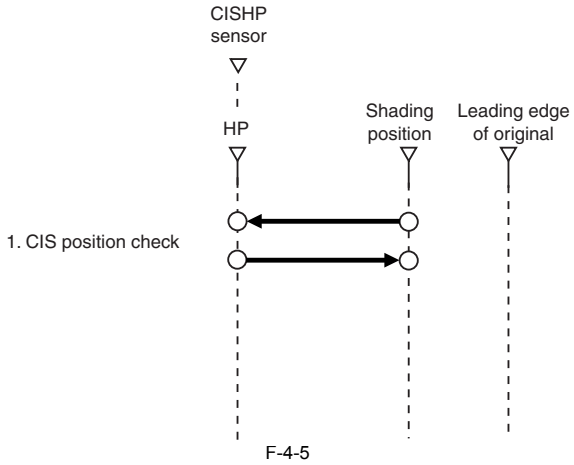
4.2 Basic Sequence

4.2.1 Basic Sequence at Power-on

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



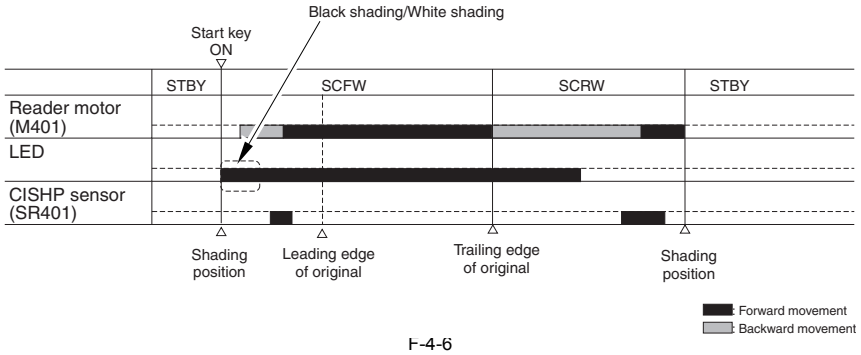
F-4-4



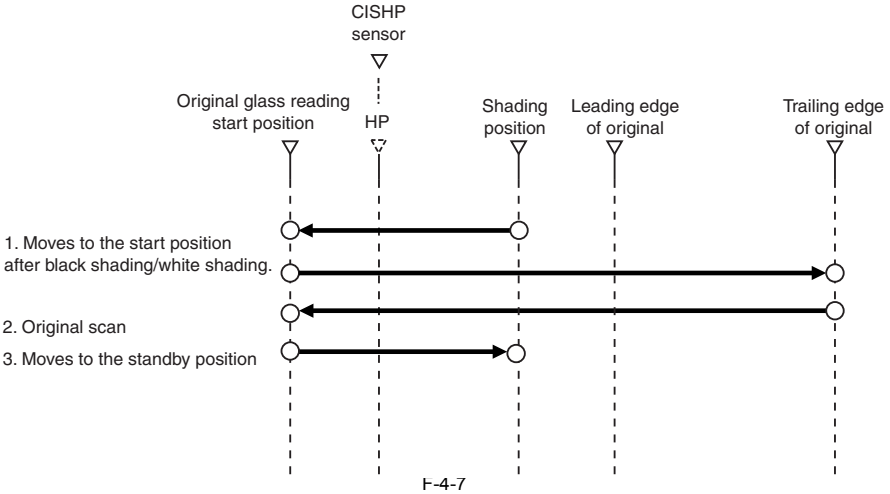
F-4-5

4.2.2 Basic Sequence after Depression of Start Key (Book mode, One Sheet of original)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



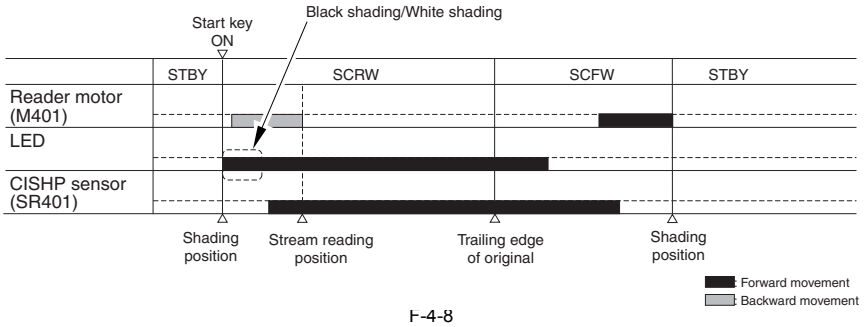
F-4-6



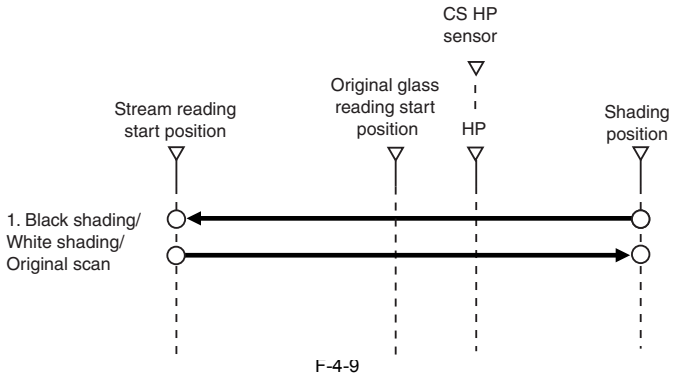
F-4-7

4.2.3 Basic Sequence after Depression of Start Key (ADF Mode, One Sheet of Original)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-4-8



F-4-9

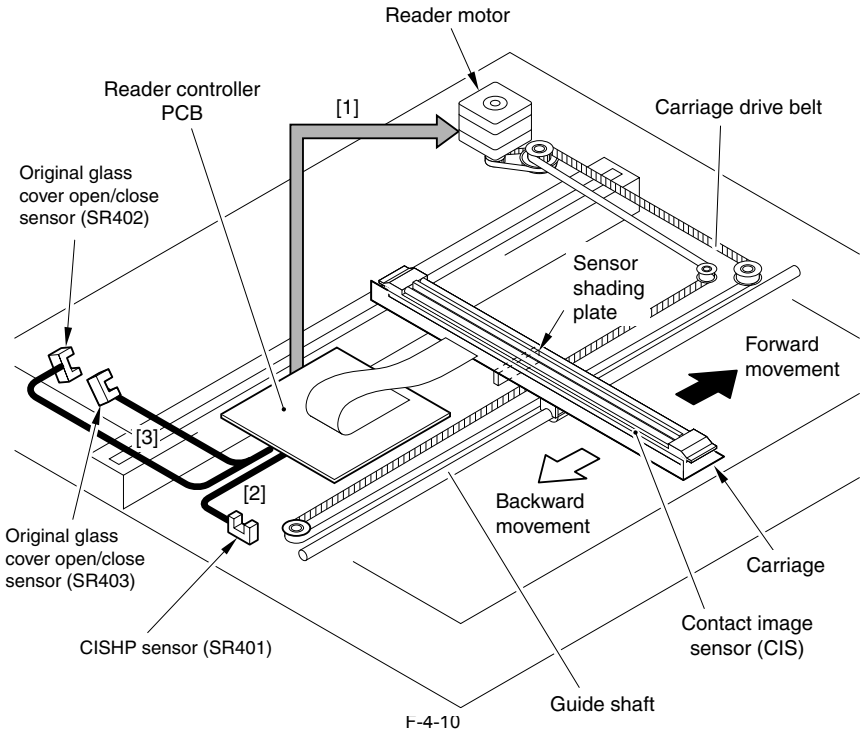
4.3 Various Control

4.3.1 Controlling the Scanner Drive System

4.3.1.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine's scanner system consists of the following components:



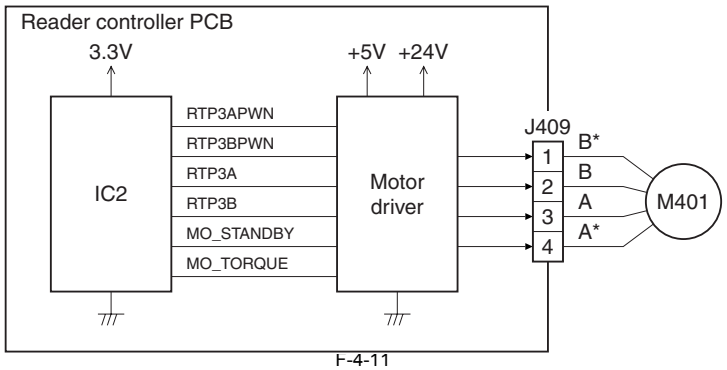
F-4-10

[1] Reader motor (M401) drive signal
Controls rotation/stop and rotational direction/speed of the reader motor.
[2] Contact image sensor (CIS) HP sensor (SR401) signal
Detects that the contact image sensor (CIS) is at the home position.
[3] Copyboard cover sensor (SR403 (front)/SR402 (rear)) signal
Detects the open/close status of the copyboard cover.

4.3.1.2 Reader Motor Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

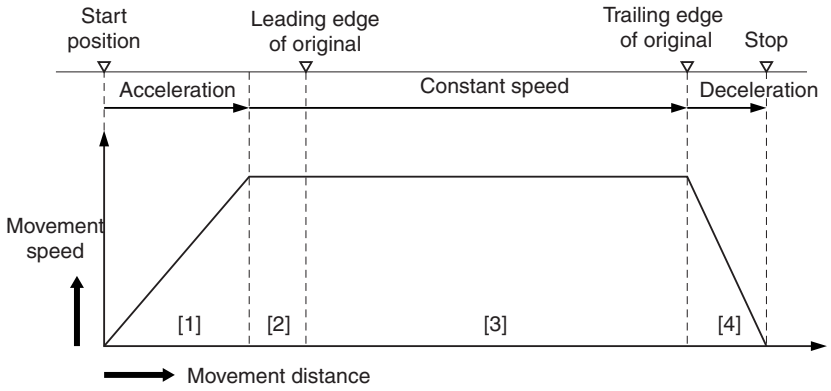
The reader motor driver controls rotation/stop and rotational direction/speed of the reader motor based on the signals from IC2.



F-4-11

MEMO:
The scan speed of this machine is as follows:
Copy (100%): 118 mm/sec
Color send (300 dpi x 300 dpi): 28 mm/sec

a. Forward Movement during Image Scan
During image scan, operation of the contact image sensor (CIS) is controlled by controlling the motor as shown below.



[1] Acceleration area: The motor accelerates to the speed specified for each mode.
[2] Runup area: A margin to stabilize the speed.
[3] Image read area: The image is read at a constant speed.
[4] Deceleration area: Upon detection of the trailing edge, the motor decelerates rapidly and stops.

F-4-12

b. Backward Movement after Image Scan
After image scan, the carriage moves back to the contact image sensor (CIS) shading position at the constant speed (118 mm/sec).

4.3.2 Contact Image Sensor (CIS)

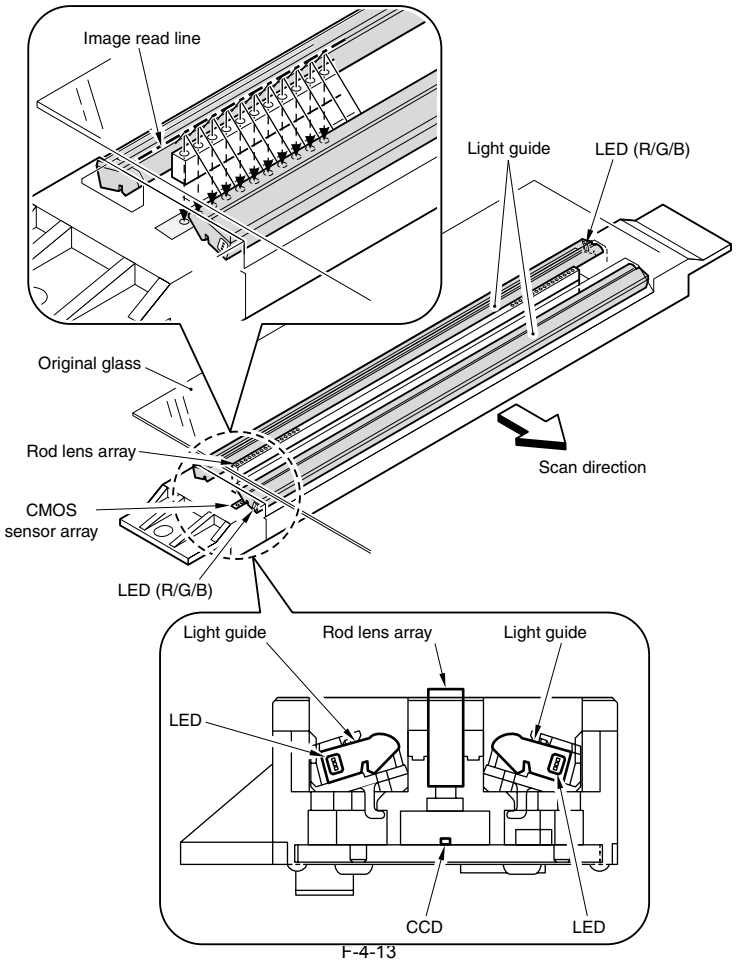
4.3.2.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The original is exposed to light and read using the contact image sensor (CIS) to read the image on a line-by-line basis.

T-4-4

Component	Function
LED	Illuminates the original.
Light guide	Illuminates the entire image line with the LED light.
Rod lens array	Collects the light reflected by the original.
CMOS sensor array	Receives the light that passed through the rod lens array.



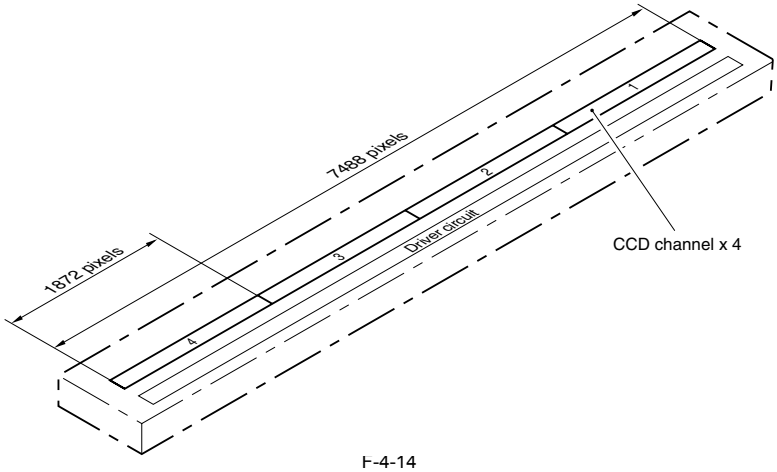
F-4-13

4.3.2.2 Analog Control Performed by the CIS

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The flow of analog image processing performed by the contact image sensor (CIS) is as follows:

The light reflected by the original is collected by the rod lens array.
- The light is received by the CMOS sensor array.
- The CMOS sensor array converts the received light to an electric signal and outputs it.
The CMOS sensor array consists of four channels (units).
Each channel is provided with an output correction table to output an image signal after performing gain correction for the input brightness signal.



F-4-14

- After replacing the contact image sensor (CIS), go through the following steps to perform inter-channel output correction:
1) Enter the service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".
5) Press the [1] key to display "SHADING".
6) Press [OK].
After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.
After completion of automatic adjustment, "OK" is displayed.

4.3.3 Enlargement/Reduction

4.3.3.1 Magnification Change in Vertical Scan Direction

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

In the Book mode or when the ADF is used
In the vertical scan direction, the image is read at 100%. Magnification is changed by processing data on the image processor PCB.

4.3.3.2 Magnification Change in Horizontal Scan Direction

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

In the horizontal scan direction, magnification is changed as follows depending on the selected magnification rate:
1) When magnification is reduced to 50-99%
a. In the Book mode
Data is processed on the image processor PCB with the original scan speed held at 118 mm/sec.

b. When the ADF is used
The original feed speed is changed within the range of 118 mm/sec to 236 mm/sec depending on the selected magnification rate. Data is not processed on the image processor PCB.

2) When magnification is increased to 100-200%
The original scan speed (in the Book mode)/original feed speed (when the ADF is used) is changed within the range of 118 mm/sec to 59 mm/sec depending on the selected magnification rate. Data is not processed on the image processor PCB.

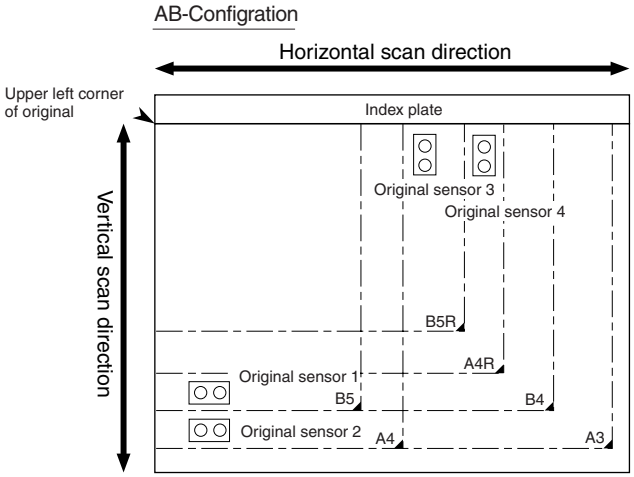
4.3.4 Detecting the Size of Originals

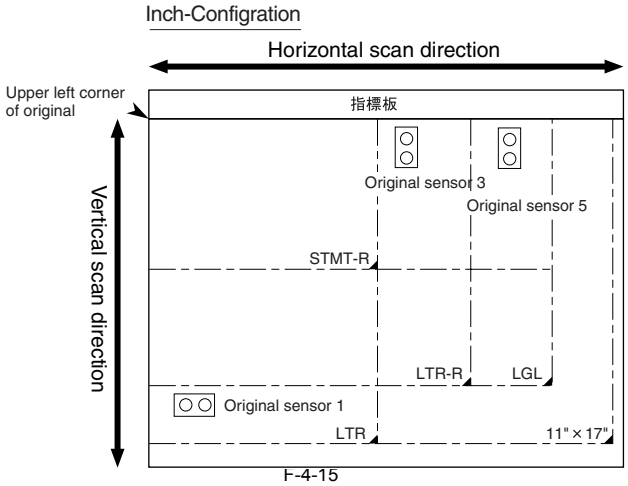
4.3.4.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The original size is identified by the combination of presence and absence of output levels of the reflection type sensors as summarized in the tables below.
- Absence of paper: The light reflected from the reflection type sensor changes when the copyboard cover is open/close.
- Presence of paper: The light reflected from the reflection type sensor does not change when the copyboard cover is open/close.

This machine is provided with the following sensors. Locations of the sensors are shown below.
- Vertical scan direction: Reflection type photo sensors (2 locations for AB; 1 location for Inch)
- Horizontal scan direction: Reflection type photo sensors (2 locations for AB; 2 locations for Inch)





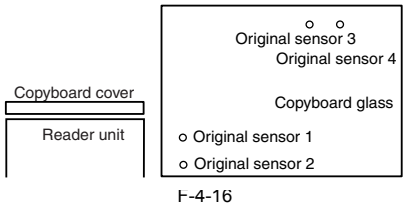
F-4-15

4.3.4.2 Outline of Original Size Detection

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

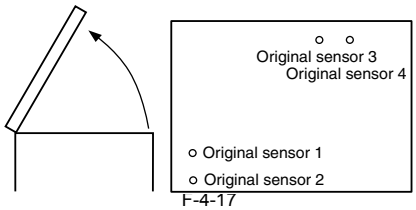
- In the BOOK mode
One sheet of original (A4R) is set and the copyboard cover (or ADF) is closed.

1) Standby state
Original sensor: Turns off.



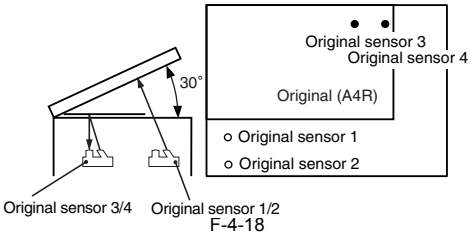
F-4-16

2) The copyboard cover opens (at an angle of more than 30o).
Original sensor: Turns off.



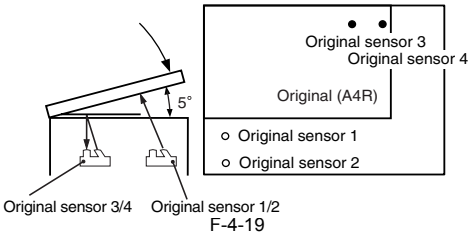
F-4-17

3) The copyboard cover is closed (at an angle of 30 deg).
Original sensor: Turns on and original size identification process 1 is performed.



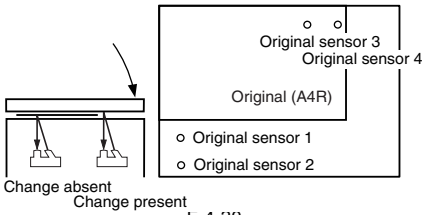
F-4-18

4) The copyboard cover is closed (at an angle of more than 5 deg but less than 30 deg)
Original sensor: Turns on and original size identification process 2 is performed.



F-4-19

5) The original cover is closed (at an angle of 5 deg or less)
The original size is identified.
Original sensor: Turns off.
In identifying the original size, the data obtained in the original size identification process 1 is compared with the data obtained in the original size identification process 2 to check whether these two pieces of data are identical.
Note that a wrong original size may be identified because the sensor output level does not change in the following cases:
- When the original is A3-sized black
- When the original is a book (its thickness does not allow the copyboard cover to close fully, making it difficult to detect the sensor level change).
- When the copyboard cover is not closed fully (the sensor level change is not detected after lapse of the above time-out time)



F-4-20

Before original size identification processes 1 and 2 are performed, the original size is detected with original sensors as follows:

AB-Configration

Original size	Original sensor 1	Original sensor 2	Original sensor 3	Original sensor 4
A3	○	○	○	○
A4	○	○	●	●
B4(8K)*1	○	●	○	○
B5(16K)*1	●	○	○	○
A4R	●	●	○	○
B5R(16K)*1	●	●	○	●
No original	●	●	●	●

Inch-Configration

Original size	Original sensor 1	Original sensor 3	Original sensor 5
11"X17"	○	○	○
LTR	○	●	●
LGL	●	○	○
LTR-R	●	○	●
No original	●	●	●

○ :No original
● :Change absent

F-4-21

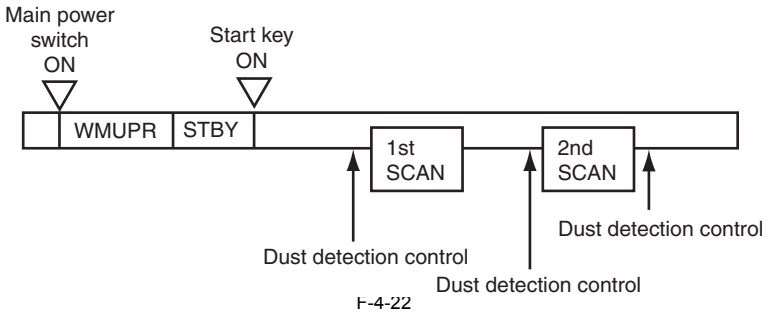
4.3.5 Dirt Sensor Control

4.3.5.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine changes the original read position or corrects the read image depending on the presence/absence of dust on the stream reading glass or ADF platen roller, thus preventing dust from showing up in the image. This control is performed only when the ADF is used and it is closed.

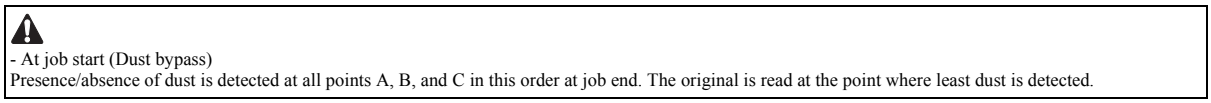
[Control Timing]
- At job end
- Immediately before scanning (one sheet at a time)



F-4-22

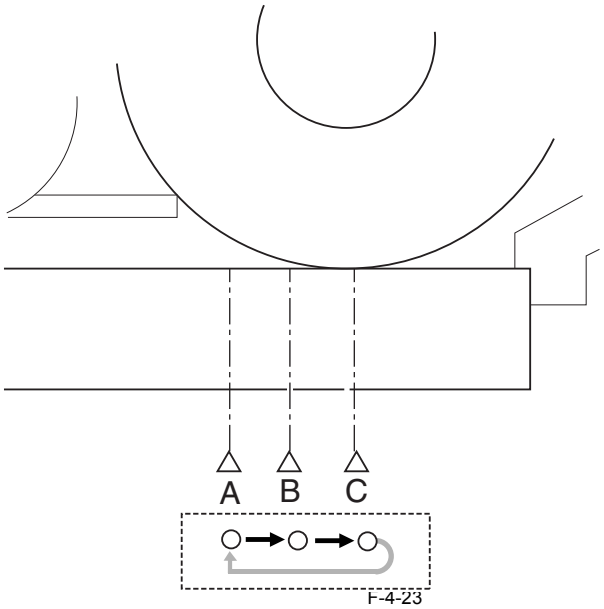
[Description of Control]
- At job end (Dust detection)

The contact image sensor (CIS) checks the light reflected by the ADF platen roller surface at the read position for presence/absence of dust. After completion of a job, dust detection is performed maximum six times in 3 point of A, B and C. First, dust detection is performed once at position A. If no dust is detected at position A, dust detection is performed twice there. If no dust is detected, the original is scanned at position A. If dust is detected at position A, move to position B and dust detection is performed twice at position B. If no dust is detected at position B, the original is scanned at position B. If dust is also detected at position B, move to position C and dust detection is performed once at position C. If dust is also detected at position C, a relevant message is displayed on the operation panel. In this case, move back to position A and the original is scanned at position A.



- At job start (Dust bypass)

Presence/absence of dust is detected at all points A, B, and C in this order at job end. The original is read at the point where least dust is detected.

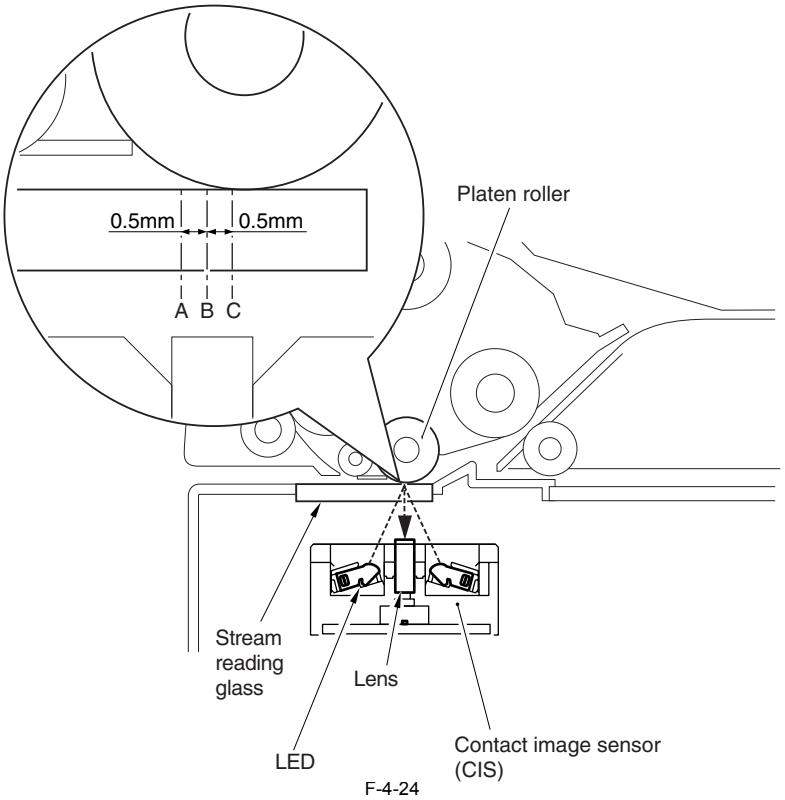


F-4-23

- Immediately before scanning (one sheet at a time)
The contact image sensor (CIS) does not move to detect dust.
The original is read at the position determined at job end or start. If presence of dust is detected there, the read image is corrected.

T-4-5

Point	Description
A	Read reference position
B	out 0.5 mm from the reference position to the inside of the roller
C	About 1.0 mm from the reference position to the inside of the roller



F-4-24

4.3.6 Image Processing

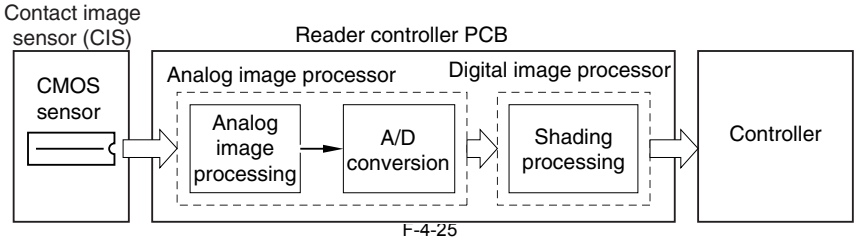
4.3.6.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Major specifications and functions of the image processing system are as follows:

T-4-6

- CMOS sensor	Number of lines: 1 Number of pixels: Total 7488 (incl. 7176 effective pixels) Pixel size: 32 x 46.9 um
- Shading correction	Shading correction: Made for each job. Shading adjustment: Made in the Service mode.



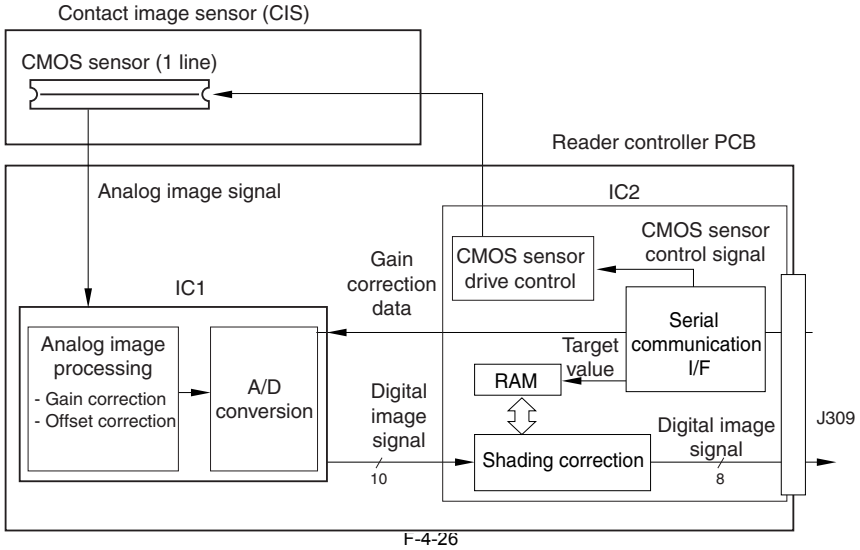
F-4-25

Functions of the image processing system are summarized below.

T-4-7

- Reader controller PCB	CMOS sensor drive, analog image processing, A/D conversion, and shading correction

The reader controller PCB is used to process images on a line-by-line basis. Its major functions are as follows:
1)Analog image processing
- CMOS sensor drive
- CMOS sensor output gain correction and offset correction
- CMOS sensor output A/D conversion
2)Digital image processing
- Shading correction

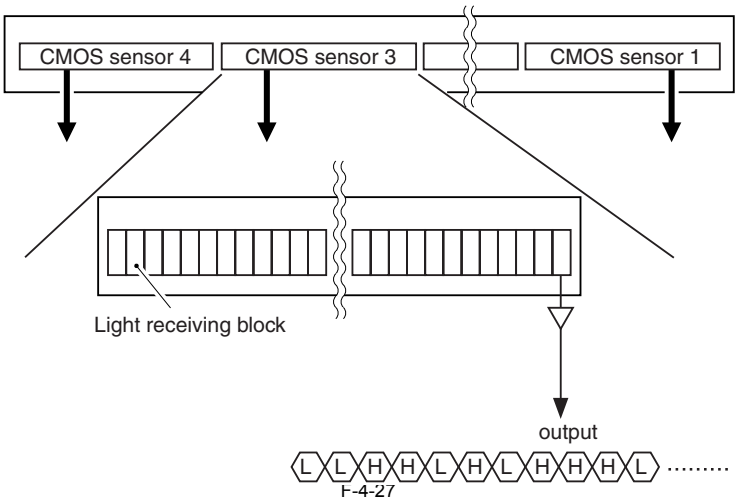


F-4-26

4.3.6.2 CMOS Sensor Drive

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The CMOS sensor used in this machine is a 1-line linear image sensor consisting of 7488 photocells. After completion of photoelectric conversion in the light-receiving block, the signals are output to the AP circuit in the reader controller PCB in parallel for each channel (total four channels) of the CMOS sensor array.



F-4-27

4.3.6.3 CMOS Sensor Output Gain Correction and Offset Correction

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The analog video signals output from the CMOS sensor are corrected so that they will have a specific gain level (gain correction), and the output voltages generated in the absence of incident light are also corrected so that they it will have a specific offset level (offset correction).

4.3.6.4 CMOS Sensor Output A/D Conversion

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

After completion of the above corrections, the analog video signals are converted to digital signals corresponding to individual pixel voltage levels by the A/D converter.

4.3.6.5 Shading Correction (Outline)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The CMOS sensor outputs are necessary even for the following reasons even when the density of the original is uniform:

(1) Variation in sensitivity among CMOS sensor pixels
(2) Variation in light intensity of rod lens array

The machine performs shading correction to even out the CMOS sensor output.
There are two types of shading correction: shading adjustment performed in the Service mode and shading correction performed for each job.

4.3.6.6 Shading Adjustment

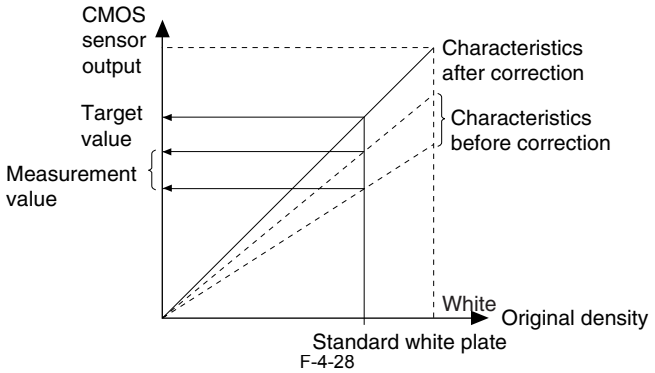
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine measures the density of the standard white plate, and stores the measured density data. It then processes the stored data to use it as the target value for shading correction.

4.3.6.7 Shading Correction

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine performs shading correction for each scan. It measures the density of the standard white plate, and compares the measured value with the target value stored in the shading correction circuit to use the difference between the two as the shading correction value. The machine uses this shading correction value to correct the variation among CMOS sensor pixels when scanning the original, thus evening out the image density level.



F-4-28

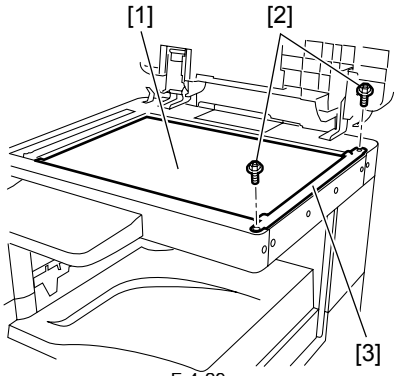
4.4 Parts Replacement Procedure

4.4.1 Copyboard Glass

4.4.1.1 Removing the Copyboard glass

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

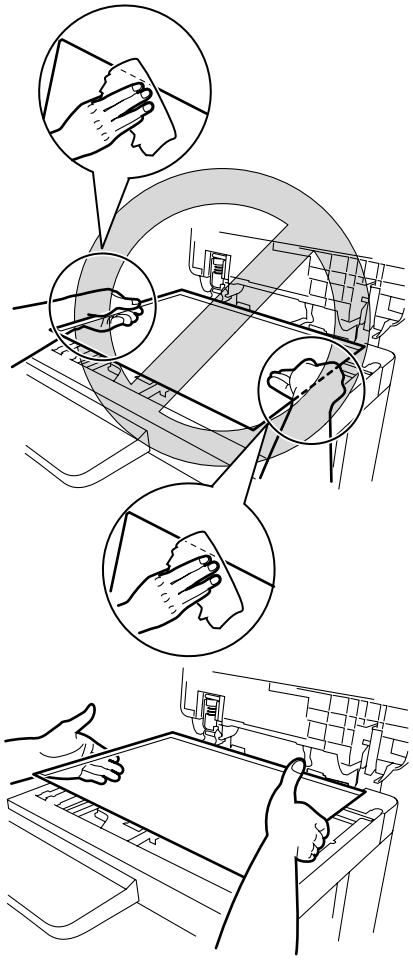
1) Open the copyboard cover (or ADF).
2) Remove the copyboard glass [1].
   - Screws [2], 2 pcs.
   - glass retainer [3].



F-4-29

When removing the copyboard glass, take care not to touch the following:
- Glass surface
- Standard white plate

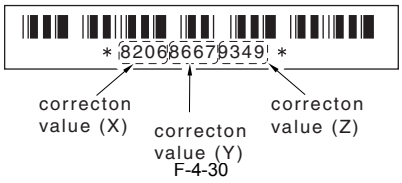
Dirt on these parts can show up as white/black lines in the image. If dirt is found, remove it with lint-free paper moistened with alcohol.



4.4.1.2 Procedure after Replacing the Copyboard Glass (Model equipped with ADF)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

After replacing the copyboard glass, enter the correction values (X, Y, Z) of the standard white plate which are indicated on the back of the new copyboard glass in the service mode.
Correction value (X): Service mode>#SCAN>#SCAN NUMERIC>No.213
Correction value (Y): Service mode>#SCAN>#SCAN NUMERIC>No.214
Correction value (Z): Service mode>#SCAN>#SCAN NUMERIC>No.215
Also, rewrite the values on the service label.

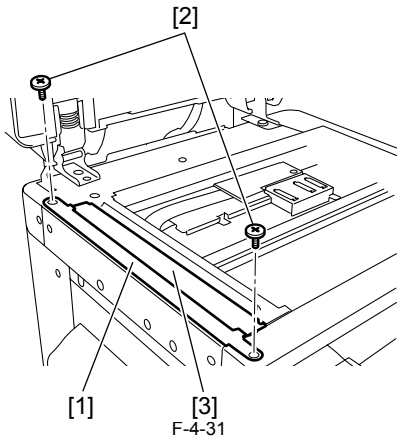


F-4-30

4.4.1.3 Removing the ADF Reading Glass

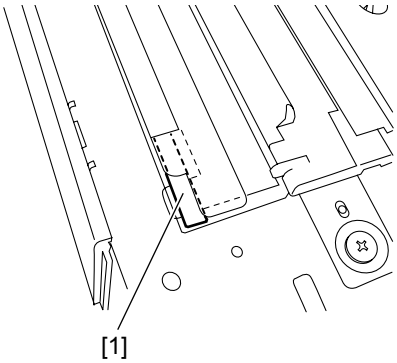
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the copyboard cover (or ADF).
2) Remove the glass retainer [1].
   - Screws [2], 2 pcs
3) Remove the ADF reading glass [3].



F-4-31

- When removing the ADF reading glass, take care not to touch the glass surface. Dirt on these parts can show up as white/black lines in the image. If dirt is found, remove it with lint-free paper moistened with alcohol.
- When installing the ADF reading glass, position the cut portion [1] of the ADF reading glass sheet at the front-left corner.



F-4-32

4.4.2 Reader Controller PCB

4.4.2.1 Removing the Reader Controller PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Open the front cover.

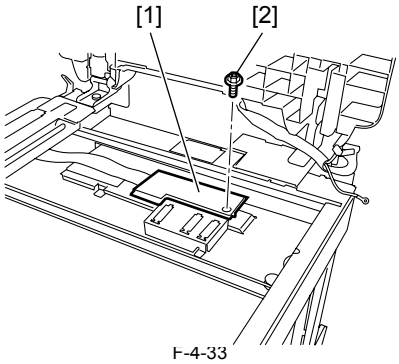
3) Detach the right cover (lower).
4) Detach the right cover (Upper).
5) Detach the left cover (rear).
6) Open the copyboard cover (or ADF).
7) Detach the small cover.
8) Disconnect the ground cable of the ADF harness.
9) Remove the ADF harness.
10) Detach the reader rear cover.
11) Remove the glass retainer.
12) Remove the copyboard glass.

MEMO:

This machine stores adjustment values in the image processor PCB, not the reader controller PCB.

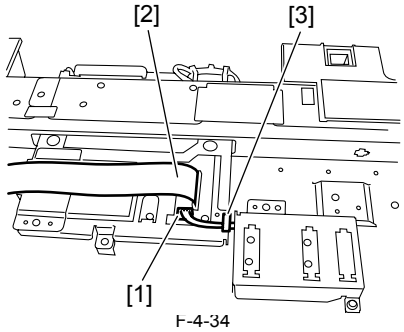
Accordingly, you need not input adjustment values after replacing the reader controller PCB.

13) Detach the cover [1].
- Screw [2], 1 pcs



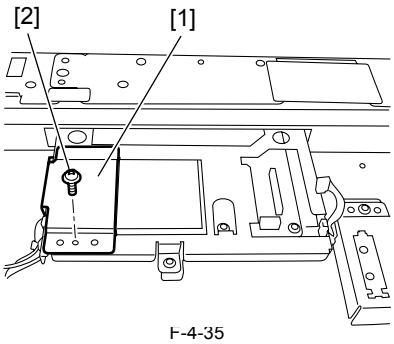
F-4-33

14) Disconnect the connector [1] and flexible cable [2] from the leader controller PCB, and then remove the harness from the edge saddle [3].



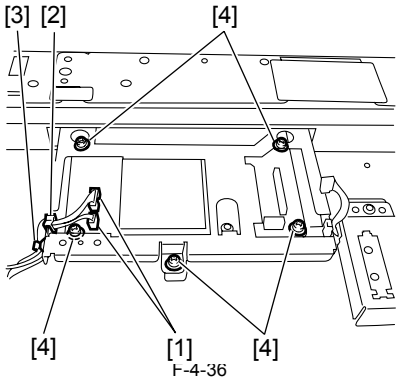
F-4-34

15) Detach the cover [1].
- Screw [2], 1 pcs



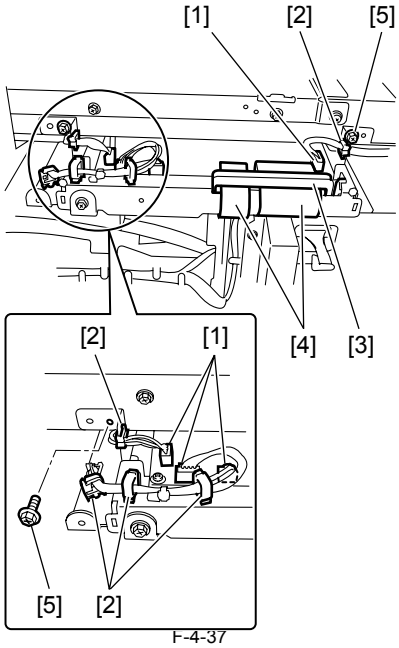
F-4-35

16) Disconnect the two connectors [1], and then remove the harness from the edge saddle [2] and clamp [3]. And then remove the five screws [4].



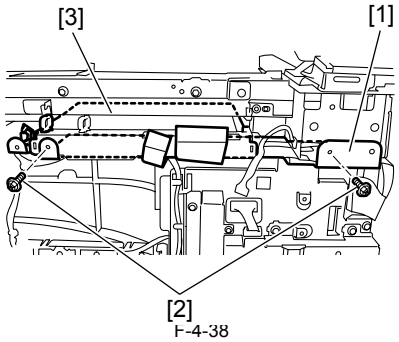
F-4-36

17) Go to the back of the machine, and then disconnect the four connectors [1] from the reader controller PCB.
18) Remove the harness from the edge saddle/clamp [2].
19) Remove the flexible cable holder [3], and then disconnect the two flexible cables [4].
20) Remove the two screws [5].



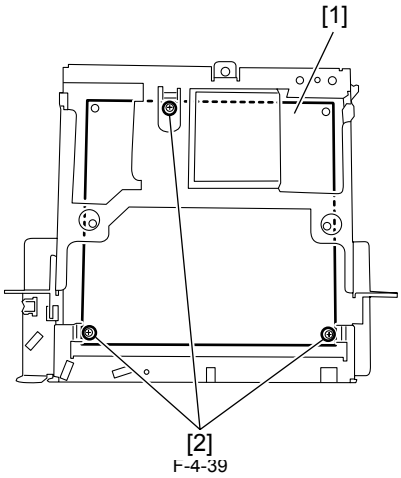
F-4-37

21) Remove the flexible cable guide [1].
- Screws [2], 2 pcs
22) Remove the reader controller PCB [3] together with the mount.



F-4-38

23) Remove the reader controller PCB [1] from the mount.
- Screws [2], 3 pcs



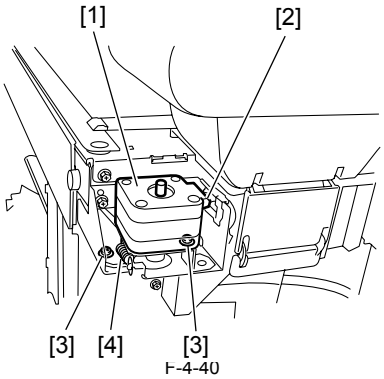
F-4-39

4.4.3 Reader Motor

4.4.3.1 Removing the Scanner Motor

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Open the front cover.
3) Detach the right cover (lower).
4) Detach the right cover (upper).
5) Detach the left cover (rear).
6) Open the copyboard cover (or ADF).
7) Detach the small cover.
8) Disconnect the ground cable of the ADF harness.
9) Remove the ADF harness.
10) Detach the reader rear cover.
11) Remove the scanner motor.
- Connector [2], 1 pcs.
- Screw [3], 2 pcs.
- Spring [4], 1 pcs.



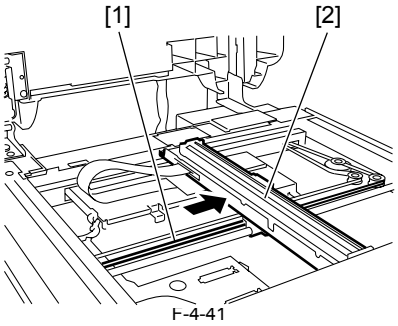
F-4-40

4.4.4 Contact Sensor

4.4.4.1 Removing the Contact Image Sensor (CIS)

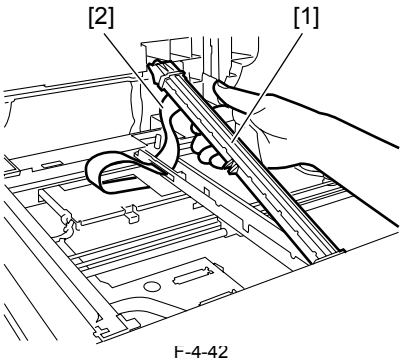
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Open the front cover.
3) Detach the right cover (lower).
4) Detach the right cover (upper).
5) Detach the left cover (rear).
6) Open the copyboard cover (or ADF).
7) Detach the small cover.
8) Disconnect the ground cable of the ADF harness.
9) Remove the ADF harness.
10) Detach the reader rear cover.
11) Open the copyboard cover (or ADF).
12) Remove the copyboard glass.
13) Pull the drive belt (front) [1] in the direction of the arrow to move the contact sensor [2] to the position shown below.



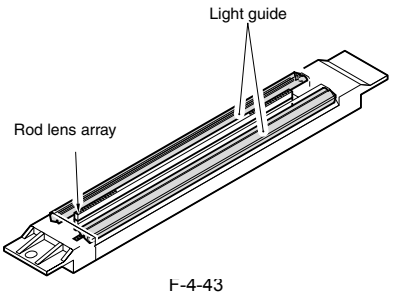
F-4-41

2) Remove the rear side of the contact sensor [1] from the carriage.
3) Disconnect the flexible cable [2], and then remove the contact sensor [1].



F-4-42

> ⚠ When removing or installing the contact sensor unit, take care not to touch the light guide and rod lens array.



F-4-43

4.4.4.2 Procedure after Replacing the CIS(Touch panel type)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

After replacing the contact image sensor (CIS), go through the following steps to perform inter-channel output correction:
1) Enter the service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".
5) Press the [1] key to display "SHADING".
6) Press [OK].
After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.
After completion of automatic adjustment, "OK" is displayed.

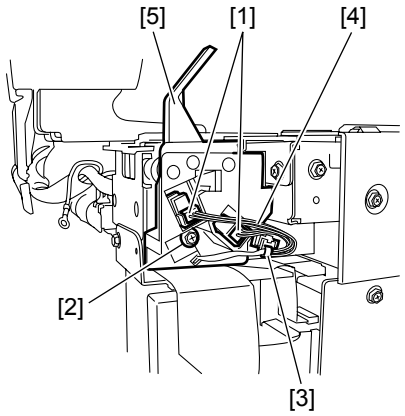
4.4.5 Copyboard Cover Open/Close Sensor

4.4.5.1 Removing the Copyboard Cover Open/Close Sensor (Front/Rear)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.

2) Open the front cover.
3) Detach the right cover (lower).
4) Detach the right cover (upper).
5) Detach the left cover (rear).
6) Open the copyboard cover (or ADF).
7) Detach the small cover.
8) Disconnect the ground cable of the ADF harness.
9) Remove the ADF harness.
10) Detach the reader rear cover.
11) Disconnect the two connectors [1], and then remove the screw [2].
12) Remove the reusable band [3], and then remove the harness [4] from the sensor mount.
13) Remove the sensor mount [5].
14) Remove the sensor from the sensor mount.



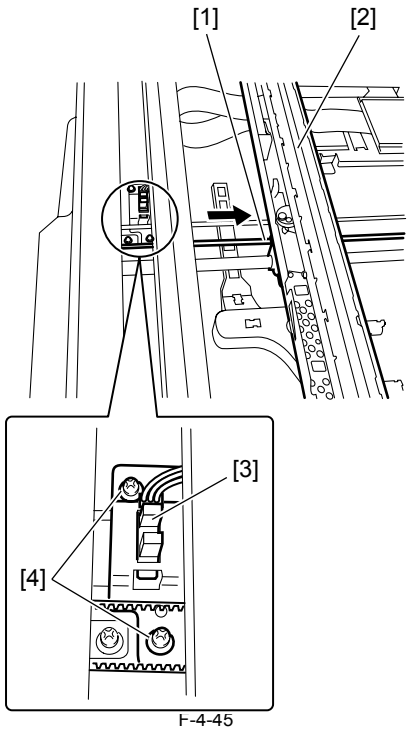
F-4-44

4.4.6 Contact Sensor HP Sensor

4.4.6.1 Removing the Contact Sensor HP Sensor

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the copyboard cover (or ADF).
2) Remove the copyboard glass [3].
3) Remove the ADF reading glass.
4) Pull the drive belt (front) [1] in the direction of the arrow to move he contact sensor [2] to the center.
5) Remove the contact sensor [3] together with the mount.
- Screw[4], 2 pcs
6) Remove the contact sensor HP sensor.



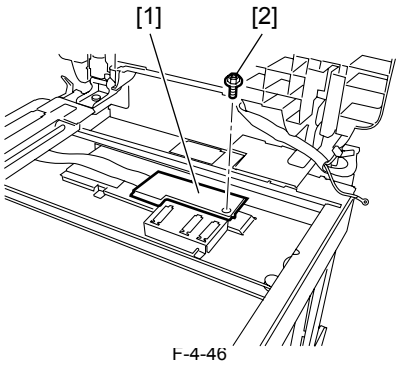
F-4-45

4.4.7 Original Size Sensor

4.4.7.1 Removing the Original Sensor (Vertical Scan Direction)

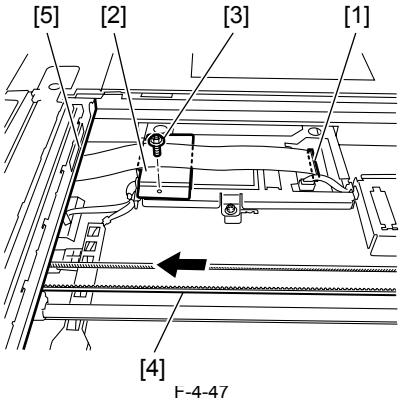
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the copyboard cover (or ADF).
2) Remove the copyboard glass.
3) detach the cover [1].
- Screw [2], 1 pcs



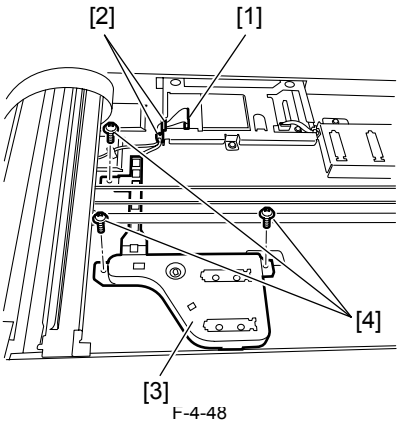
F-4-46

4) Disconnect the flexible cable [1], and then detach the cover [2].
- Screw [3], 1 pcs
5) Pull the drive belt (front) [4] in the direction of the arrow to move the contact sensor [5] to the left.



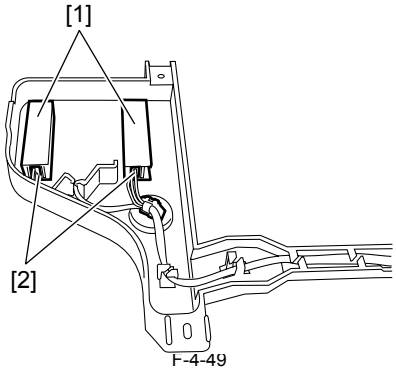
F-4-47

6) Disconnect the connector [1], and then remove the harness from the edge saddle/clamp [2].
7) remove the original sensor (vertical scan direction) [3] together with the mount.
- Screw [4], 3 pcs



F-4-48

8) Remove the original sensor (vertical scan direction) [1].
- connector [2], 2 pcs

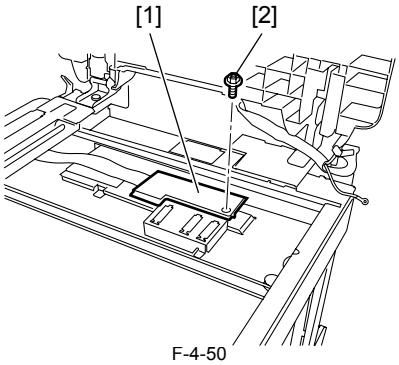


F-4-49

4.4.7.2 Removing the Original Sensor (Horizontal Scan Direction)

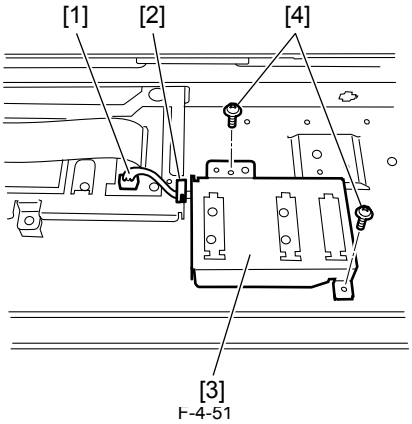
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the copyboard cover (or ADF).
2) Remove the copyboard glass.
3) Detach the cover [1].
- Screw [2], 1 pcs



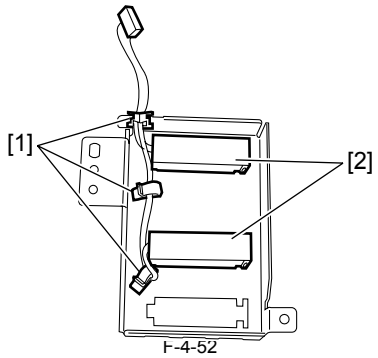
F-4-50

4) Disconnect the connector [1] from the reader controller PCB, and then remove the harness from the edge saddle [2].
5) Remove the original sensor [3] together with the mount.
- Screw [4], 2 pcs



F-4-51

6) Remove the harness from the edge saddle/clamp [1], and then disconnect the connector.
7) Remove the original sensor [2].



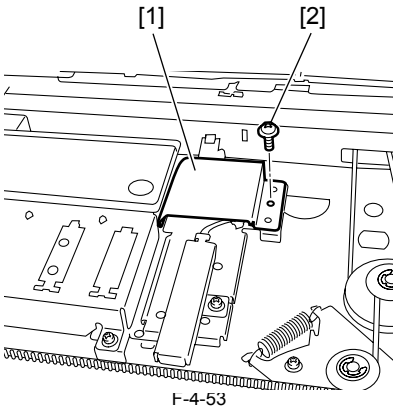
F-4-52

4.4.8 Reader Heater (option)

4.4.8.1 Removing the Reader Heater (Right)

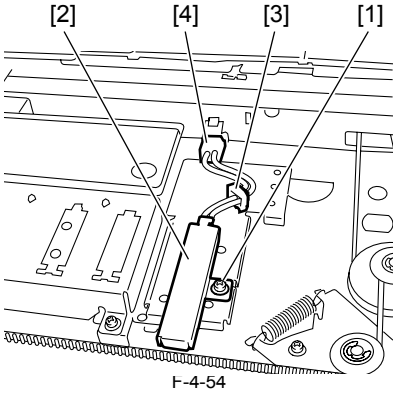
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the copyboard cover (or ADF).
2) remove the copyboard glass.
3) Detach the heater cover [1].
- Screw [2], 1 pcs



F-4-53

4) Remove the screw [1].
5) remove the reader heater (right) [2].
- wire saddle [3], 1 pcs
- connector [4], 1 pcs



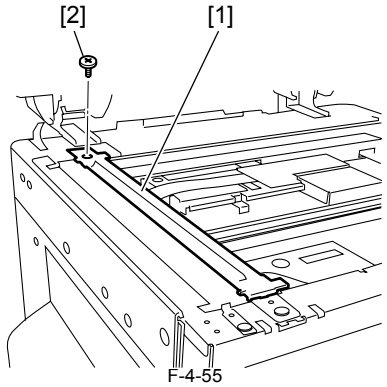
F-4-54

4.4.8.2 Removing the Reader Heater (Left)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the copyboard cover (or ADF).
2) Detach the reader front cover.
3) Remove the glass retainer.
4) Remove the ADF reading glass.

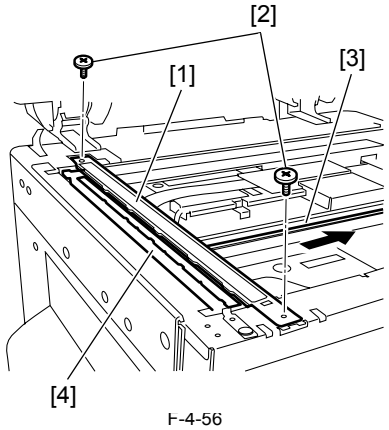
5) Remove the jump board [1].
- Screw [2], 1 pcs



F-4-55

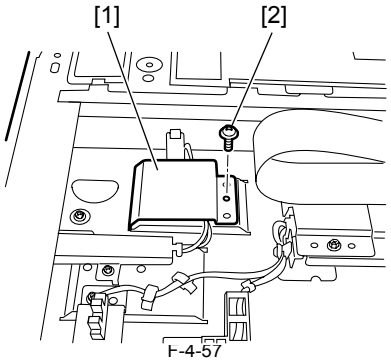
6) Remove the stream reading glass stay [1].
- Screw [2], 2 pcs

7) Pull the drive belt (front) [3] in the direction of the arrow to move the contact sensor [4] to the center.



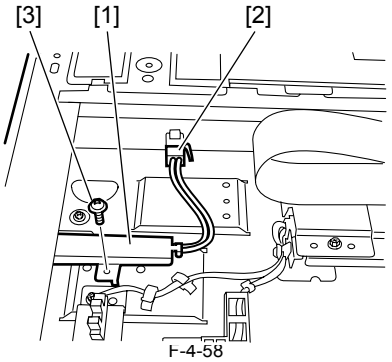
F-4-56

4) Detach the heater cover [1].
- Screw [2], 1 pcs



F-4-57

9) Remove the reader heater (left) [1].
- Connector [2], 1 pcs
- Screw [3], 1 pcs



F-4-58

Chapter 5 Laser Exposure

Contents

5.1 Overview/Configuration

5.1.1 Overview

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The laser scanner unit consists of a laser driver, scanner motor, and others. It is controlled by the signals from the DC controller PCB.
The laser driver operates the laser diode to emit light in response to the laser control signals and video signals from the DC controller PCB.
Laser beams are emitted, through a collimator lens and cylindrical lens, to the hexahedral mirror rotating at a constant speed.
Laser beam reflected by the hexahedral mirror focus on the photoconductor drum via the imaging lens and loop-back mirrors installed before the hexahedral mirror.
When the hexahedral mirror rotates at a constant speed, the photoconductor drum is scanned with laser beams at a constant speed.
When the photoconductor drum rotates at a constant speed and the photoconductor is scanned with laser beams at a constant speed, a latent image is formed on the photoconductor drum.

5.1.2 Specifications and Control Mechanism

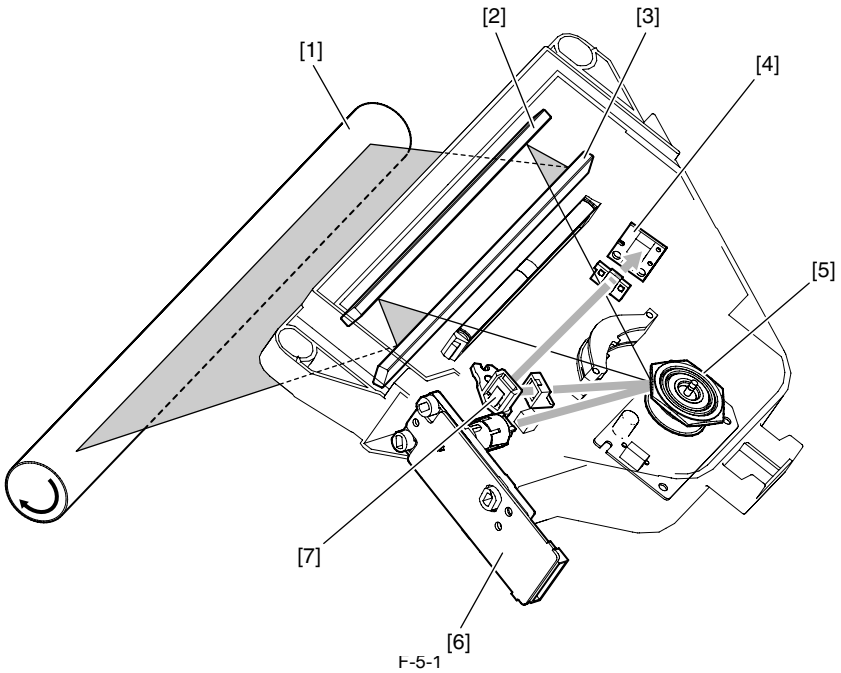
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-5-1

Laser beam	
Number of laser beams	2 beams
Scanner Motor	
Type of motor	DC brushless motor
Rotation control	Constant speed rotaion control
Polygon Mirror	
Number of facets	6 facets (40-mm dia.)
Control Mechanism	
Synchronous control	Horizontal (main scan) synchronization control
Light intensity control	Automatic photocurrent control (APC)
Others	Laser emission ON/OFF control
	Laser scanner motor control
	Laser shutter control

5.1.3 Main Components

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



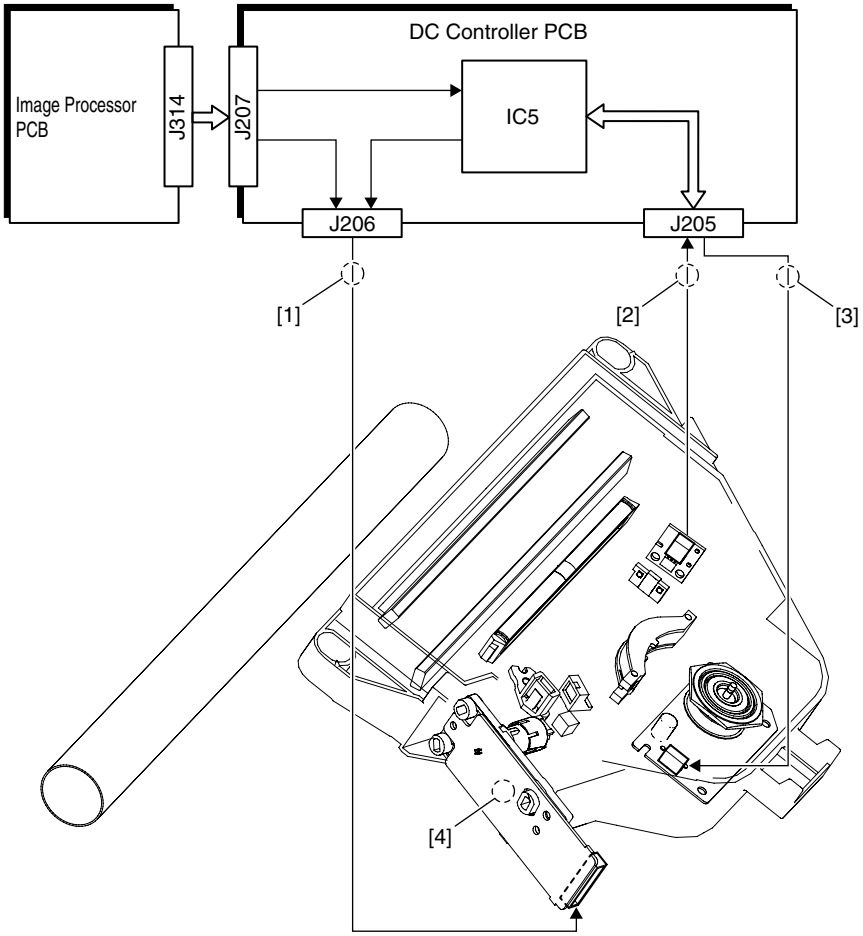
F-5-1
T-5-2

Name	Function
[1] Photoconductive drum	Receives laser beams to form a latent image.
[2] Laser mirror 1 (loop-back mirror)	Reflects a laser beam toward laser mirror 2.
[3] Laser mirror 2 (loop-back mirror)	Reflects a laser beam toward the photoconductor drum.
[4] BD PCB	Generates a BD signal.
[5] Polygonal mirror	Scans the photoconductive drum with a laser beam in the main scan direction.
[6] Laser unit	Emits laser beams.
[7] BD mirror	Reflects a laser beam toward the BD PCB.

5.1.4 Control System Configuration

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The laser exposure system is controlled mainly by the IC5 on the DC controller PCB.
Main control types are as follows:
[1] Laser emission ON/OFF control/video signal input
[2] Horizontal synchronization control
[3] Laser scanner motor control
[4] Automatic photocurrent control (APC)



F-5-2

5.2 Controlling the Laser Activation Timing

5.2.1 Laser Emission ON/OFF Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The purpose of this control is to turn ON/OFF the laser diode (LD) in response to video signals.
The DC controller PCB sends laser control signals (CNTRL0, CNTRL1, and CNTRL2), which are used to switch between laser driver operation modes, to the laser driver IC along with video signals (VDO1, /VDO1, VDO2, and /VDO2). The laser driver IC controls laser emission (ON/OFF) according to the combination of CNTRL0, CNTRL1, and CNTRL2 signals.
The following table shows combinations of laser control signals (CNTRL0, CNTRL1, and CNTRL2).

T-5-3

Laser control signal			Laser status		Description
CTL2	CTL1	CTL0	Laser A	Laser B	
0	0	0	OFF	OFF	Laser control OFF
1	1	1	Video signal input enable		Laser beams can be emitted in response to video signals.
1	1	0	ON	OFF	Forced emission of laser A (for adjustment in factory)
1	0	1	OFF	ON	Forced emission of laser B (for adjustment in factory)
1	0	0	ON	ON	Forced emission of laser A and laser B (for adjustment in factory)
0	1	0	ON	OFF	APC over laser A
0	0	1	OFF	ON	APC over laser B
0	1	1	OFF	OFF	Forced stop of laser emission

5.2.2 Horizontal Synchronization Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The purpose of this control is to adjust the position where scanning starts in the horizontal direction (main scan direction) of the image with reference to the horizontal synchronization signal (/BD) sent from the BD sensor in the laser scanner. The horizontal synchronization signal is also used as a vertical synchronization signal to recognize the leading edge of paper. Upon detection of arrival of the fed paper at the prescribed position, the DC controller PCB starts sending the /BD signal to the image porcessor PCB. The image processor PCB recognizes the leading edge of paper at the start of the continuous /BD signal; it recognizes the trailing edge of paper at the end of the continuous /BD signal.

MEMO:
About Generation of BD Signal
The BD sensor on the BD circuit board receives only the beam of laser B; it does not receive the beam of laser A. The BD signal is generated from the beam of laser A.

5.3 Controlling the Intensity of Laser Light

5.3.1 Automatic Photocurrent Control (APC)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

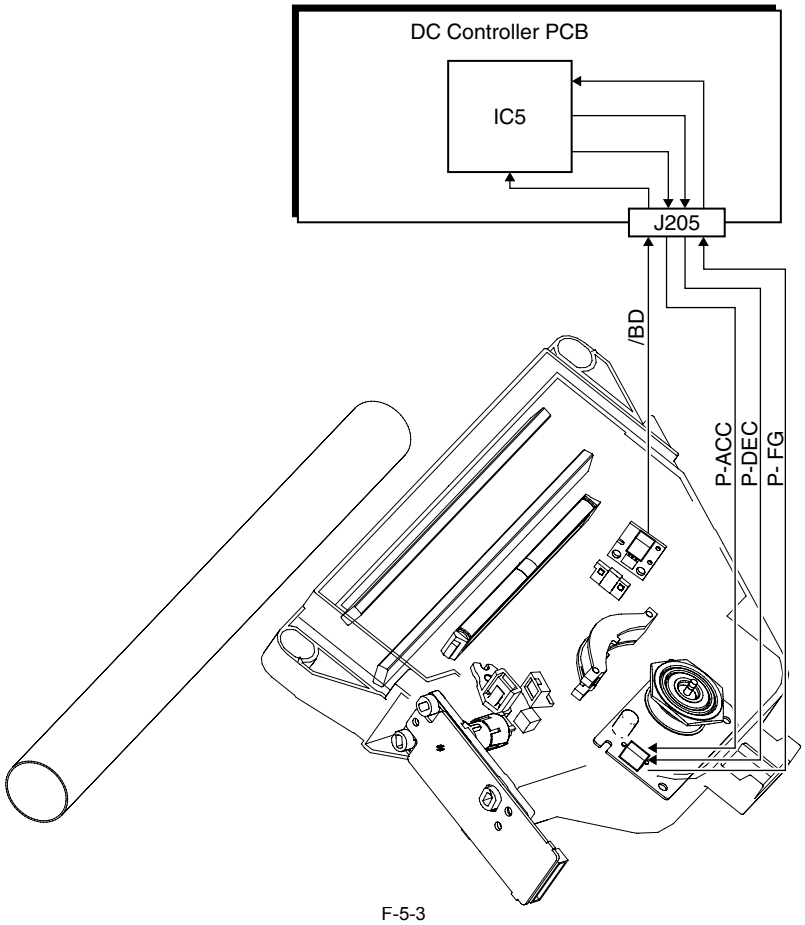
The purpose of this control is to monitor the laser beam emitted to the photodiode on the laser driver circuit board in order to adjust the light quantity.

5.4 Controlling the Laser Scanner Motor

5.4.1 Laser Scanner Motor Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

From the moment the laser scanner motor starts to the moment it reaches the target revolution speed, the revolution speed is controlled with reference to the laser scanner motor revolution speed signal (FG signal). After the target revolution speed is reached, the revolution speed is controlled so that the BD cycle and the laser scanner motor revolution cycle are in the same phase.
The revolution speed of the laser scanner motor is controlled using an acceleration signal (ACC signal) and deceleration signal (DEC signal).



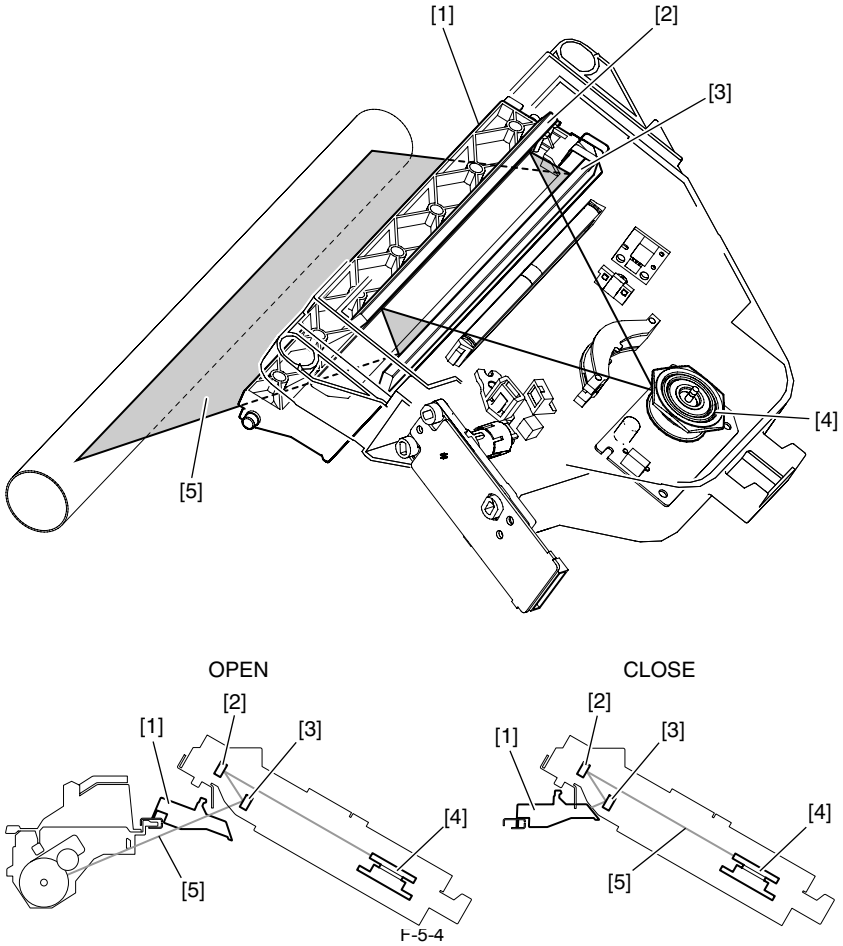
F-5-3

5.5 Controlling the Laser Shutter

5.5.1 Laser Shutter Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

When the drum unit is drawn out, the interlocked laser shutter moves down, shutting off the laser beam path. When opening of the front cover or left door is detected, the laser scanner motor and laser outputs turn off.



Laser shutter control
[1] Laser shutter
[2] Laser mirror 1
[3] Laser mirror 2
[4] Polygonal mirror
[5] Laser beam

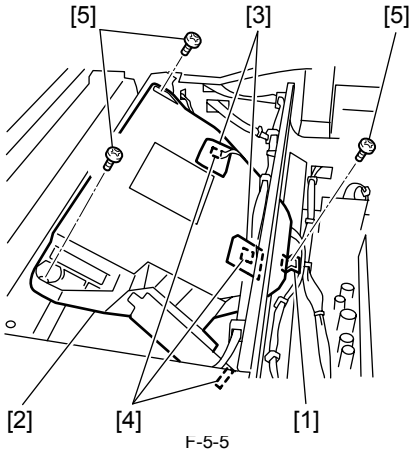
5.6 Parts Replacement Procedure

5.6.1 Laser/Scanner Unit

5.6.1.1 Removing the Laser Scanner Unit

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Open the front cover.
3) Detach the right cover (lower).
4) Detach the delivery tray.
5) Remove the metal plate [1] and laser scanner unit [2].
   - Sponge [3], 2 pcs
   - Connector [4], 3 pcs
   - Screw [5], 3 pcs



F-5-5

Chapter 6 Image Formation

Contents

6.1 Overview/Configuration

6.1.1 Specifications of Image Formation System

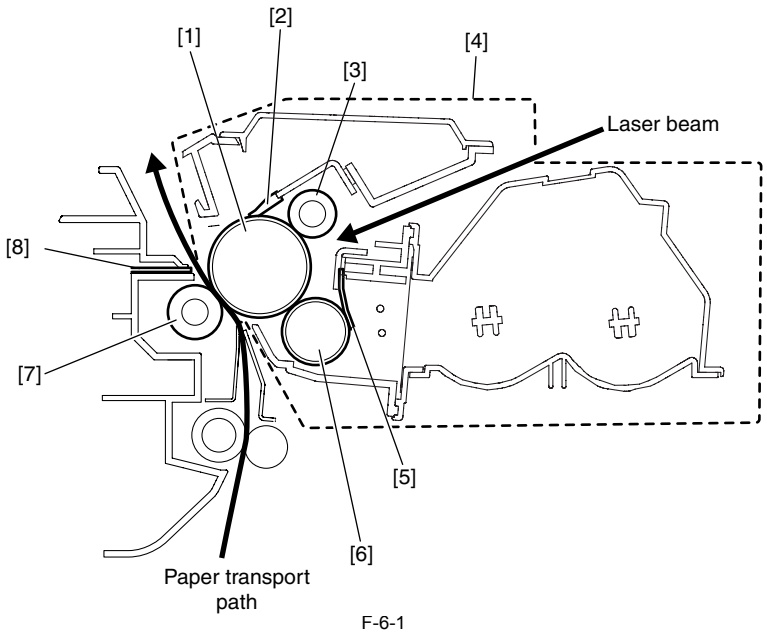
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-6-1

Photosensitive drum	
Drum type	OPC drum
Drum diameter	3mm
Cleaning mechanism	Cleaning blade
Processing speed	106.7mm/sec
Primary charging	
Charging method	Roller charging (AC + DC)
ng roller diameter	14mm
Transfer charging	
Charging method	Roller charging (DC)
Charging roller diameter	16mm
Developing assembly	
Developing cylinder diameter	20mm
Developing method	Dry, 1-component jumping (AC + DC)
Toner	1-component, negative toner
Remaining toner level detection	Remaining toner level sensor (in toner cartridge)
Others	
Separation method	Static Eliminator + Curvature separation
Waste toner	Collected in the toner cartridge.

6.1.2 Major Components of Image Formation System

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-6-1

[1] Photosensitive drum
[2] Cleaner blade
[3] Primary charging roller
[4] Toner cartridge
[5] Blade
[6] Developing cylinder
[7] Transfer charging roller
[8] Static eliminator

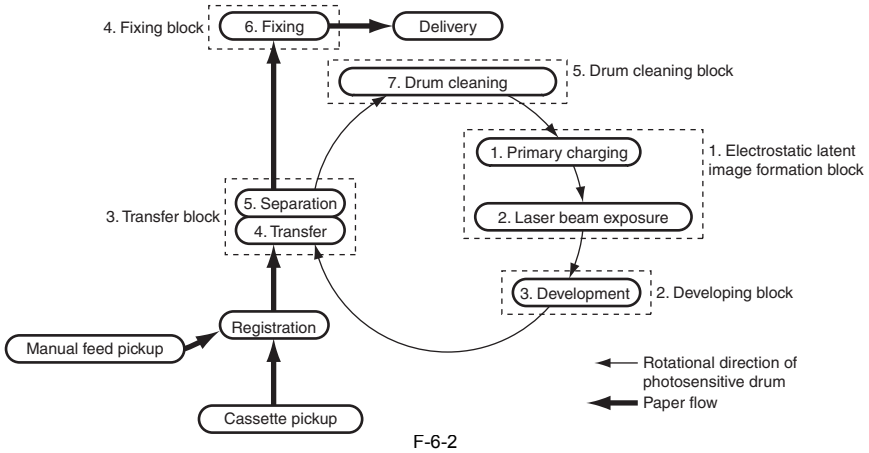
6.2 Image Formation Process

6.2.1 Image Formation Process

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The image formation system of this machine consists of toner, primary charging roller, developing unit, cartridge integrated with a drum, and transfer charging roller, and so on.

The image formation process of this machine is composed of the following five blocks (7 steps):
[1] Electrostatic latent image formation block
Step 1: Primary charging (AC & Minus DC)
Step 2: Laser exposure
[2] Developing block
Step 3: Developing (AC & Minus DC bias)
[3] Transfer block
Step 4: Transfer (Plus DC)
Step 5: Separation (Minus DC)
[4] Fixing block
Step 6: Fixing (Minus DC bias)
[5] Drum cleaning block
Step 7: Drum cleaning



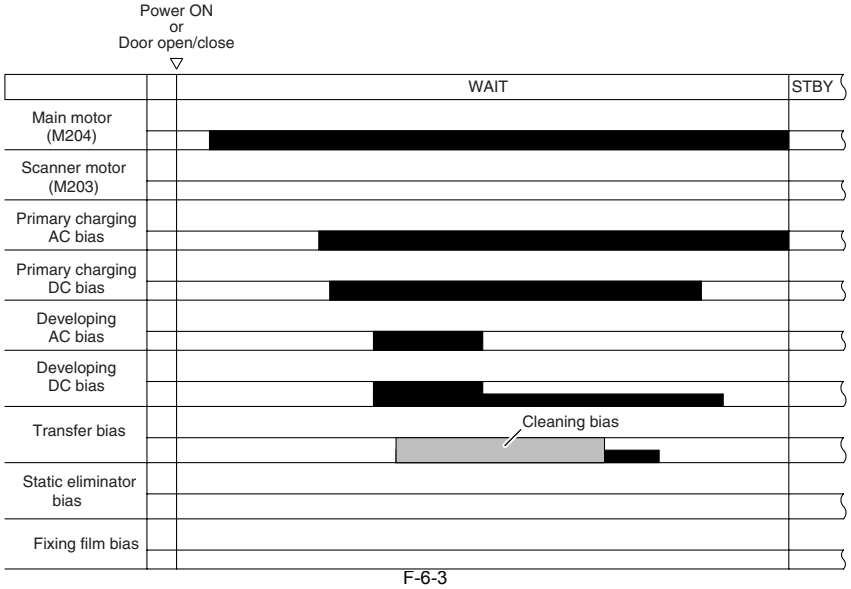
F-6-2

6.3 Basic Sequence

6.3.1 Basic Sequence of Operation

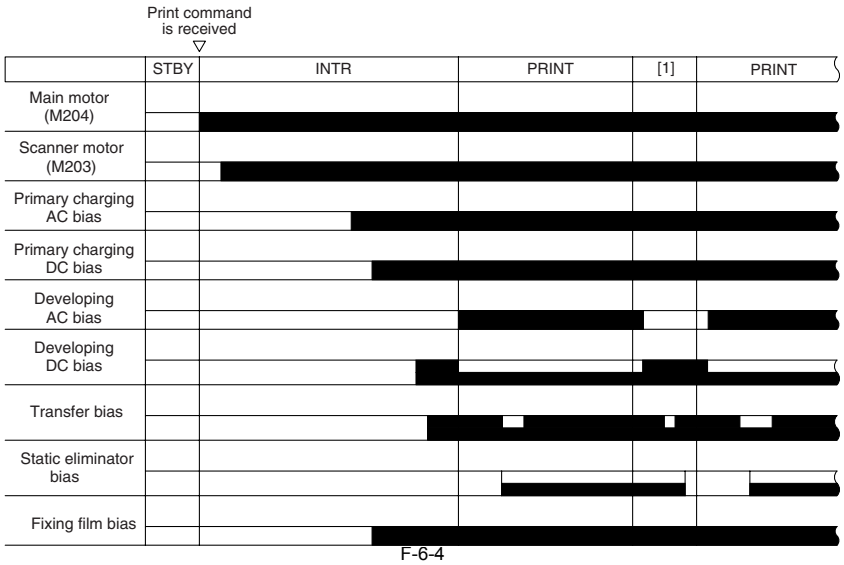
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The basic sequence of operation of this machine is explained below.
For more details, refer to the explanation of various types of bias control.
- At power-on (when the door is opened/closed)
The main motor starts rotating after completion of the error check.
To prevent fogging of the drum, the developing DC bias voltage is held higher than usual during application of the developing AC bias voltage.



F-6-3

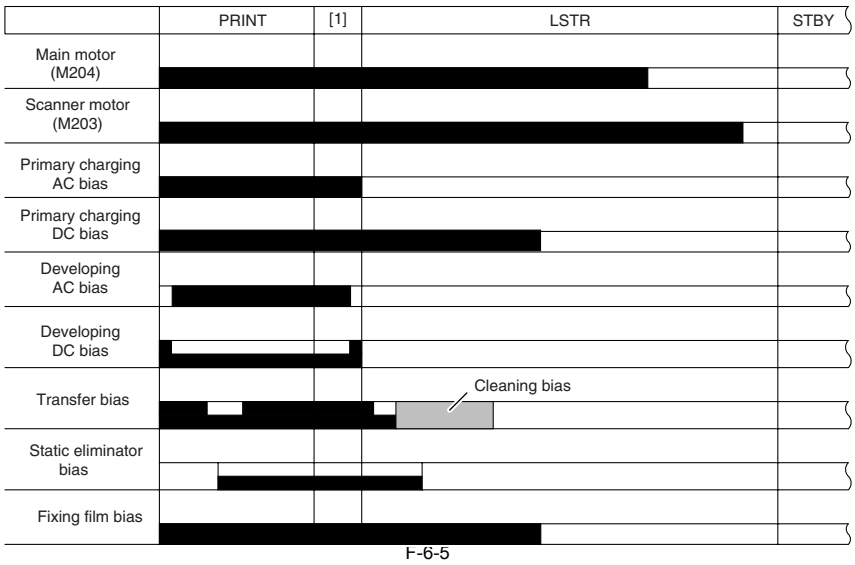
- During printing
To prevent fogging of the drum, the developing DC bias is held higher than usual except during image formation.
To prevent the toner remaining on the photosensitive drum from sticking to the transfer charging roller, the transfer roller bias which is lower than that applied during printing the is applied at the prescribed timing.



F-6-4

[1] Between sheets

- At the end of printing
To prevent fogging of the drum, the developing DC bias is held higher than usual except during image formation.
To prevent the toner remaining on the photosensitive drum from sticking to the transfer charging roller, the transfer roller bias which is lower than that applied during printing the is applied at the prescribed timing.



F-6-5

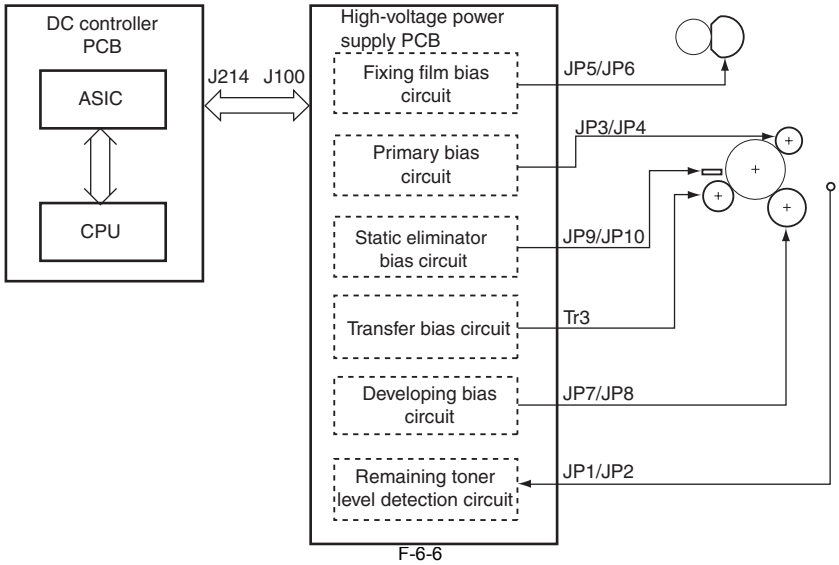
[1] Time until post-rotation

6.4 Driving and Controlling the High-Voltage System

6.4.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The voltage generated by superimposing the DC voltage over the AC voltage is applied to the primary charging roller and developing cylinder, and a positive or negative DC voltage is applied to the transfer charging roller according to the instruction of the CPU on the DC controller PCB.
The primary DC bias and developing DC bias are changed according to the image density information sent from the image processor PCB, thus adjusting the image density.
A negative DC voltage is applied to the electrostatic discharge needle and fixing film.

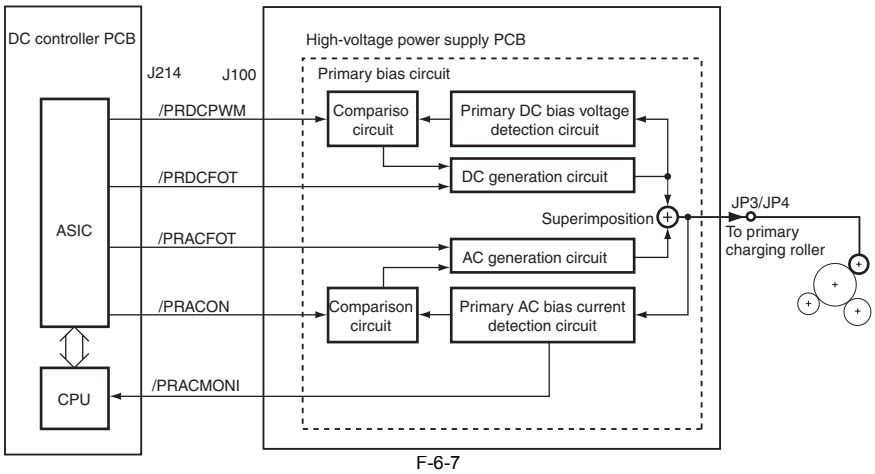


F-6-6

6.4.2 Primary Charging Bias Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

With the primary charging bias method, the drum is charged directly by the charging roller. In addition to a DC bias, an AC bias is applied to the primary charging roller to stabilize charging. When the drum is charged, both AC and DC biases are applied. When the drum is discharged, only the AC bias is applied.
The ASIC on the DC controller PCB outputs the primary bias drive signal (/PRACFOT), primary AC bias ON/OFF signal (/PRACON), primary DC bias drive signal (/PRDCFOT), and primary DC bias output level signal (/PRDCPWM) to apply the voltage generated by superimposing the primary AC bias over the primary DC bias to the primary charging roller.
The primary AC bias is detected by the primary AC bias current detection circuit, and is fed back to the AC generator circuit via the comparison circuit.
The primary DC bias is detected by the primary DC bias current detection circuit, and is fed back to the DC generator circuit via the comparison circuit. Thus, this machine controls the primary DC bias voltage. The primary DC bias voltage changes with the developing DC bias voltage according to the image density information sent from the image processor PCB.

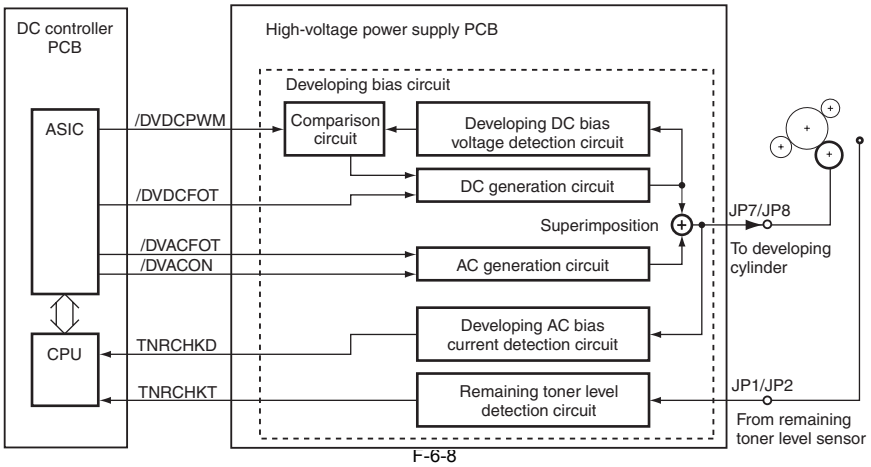


F-6-7

6.4.3 Developing Bias Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

A DC bias and an AC bias are applied to the developing cylinder.
The ASIC on the DC controller PCB outputs the developing AC bias drive signal (/DVACFOT), developing AC bias ON/OFF signal (/DVACON), developing DC bias drive signal (/DVDCFOT), and developing DC bias output level signal (/DVDCPWM) to apply the voltage generated by superimposing the developing AC bias over the developing DC bias to the developing cylinder.
To prevent fogging of the drum, a DC bias higher than usual applied except during image formation and when the developing AC bias is applied for warm-up rotation.
The developing DC bias is detected by the developing DC bias detection circuit, and is fed back to the DC generation circuit via the comparison circuit, thus controlling the DC bias voltage. The developing DC bias voltage changes with the primary DC bias voltage according to the image density information sent from the image processor PCB.
The remaining toner level is detected during warm-up rotation and when the developing AC bias is applied for printing. The remaining toner level detection signal (TNRCHKT) sampled from the antenna (for remaining toner level check) in the developing assembly is compared with the reference signal (TNRCHKD) received from the developing bias detection circuit.



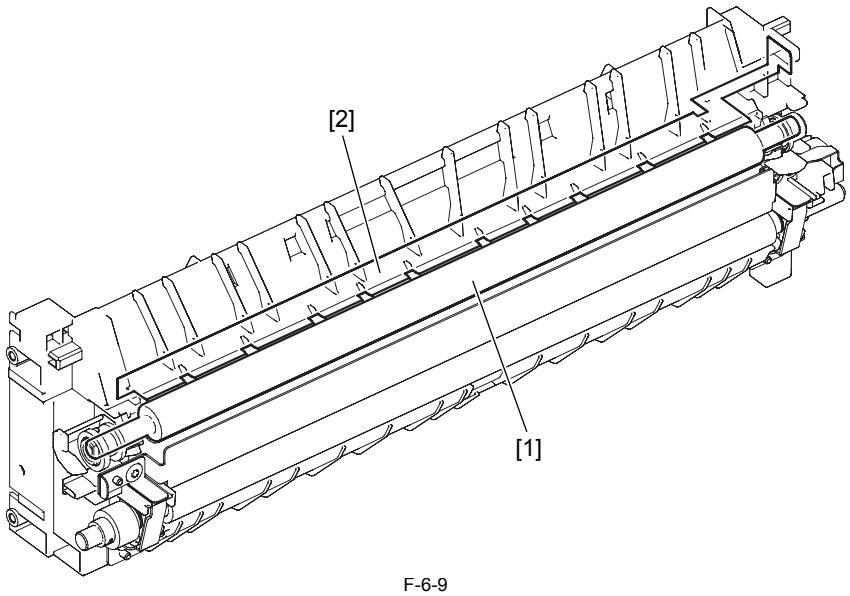
F-6-8

6.5 Secondary Transfer Mechanism

6.5.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The transfer unit consists of a transfer roller [1] and an static eliminator [2].
The transfer roller is driven by the photosensitive drum.
The static eliminator is biased to separate paper from the drum.

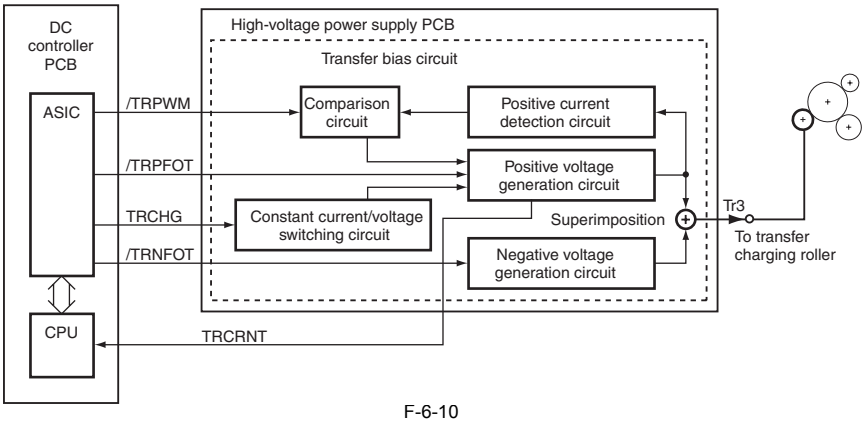


F-6-9

6.5.2 Transfer Roller Bias Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

A negative bias, sheet-to-sheet bias, or positive bias is applied to the transfer charging roller according to the type of sequence.
The negative bias is applied at the prescribed timing to moves the toner from the transfer charging roller to the photosensitive drum for cleaning.
The sheet-to-sheet bias is lower than that applied during printing and it is applied at the prescribed timing to prevent the toner remaining on the photosensitive drum from adhering to the transfer charging roller.
The positive bias is applied to transfer toner images from the photosensitive drum to paper.

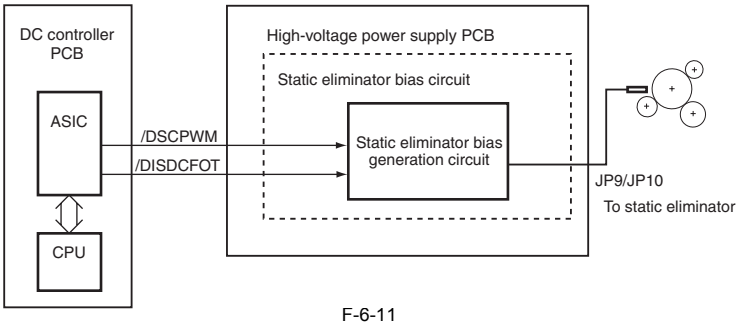


F-6-10

6.5.3 Static Eliminator Bias Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Two types of biases, a high-output bias and a low-output bias, are applied to the static eliminator using the static eliminator bias drive signal (/DISDCFOT) and static eliminator bias output level signal (/DSCPWM) issued from the DC controller PCB according to the type of the print sequence, thus allowing the printing paper to separate easily from the photosensitive drum.



F-6-11

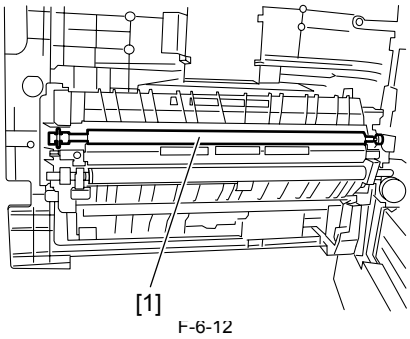
6.6 Parts Replacement Procedure

6.6.1 Transfer Charging Roller

6.6.1.1 Removing the Transfer Charging Roller

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

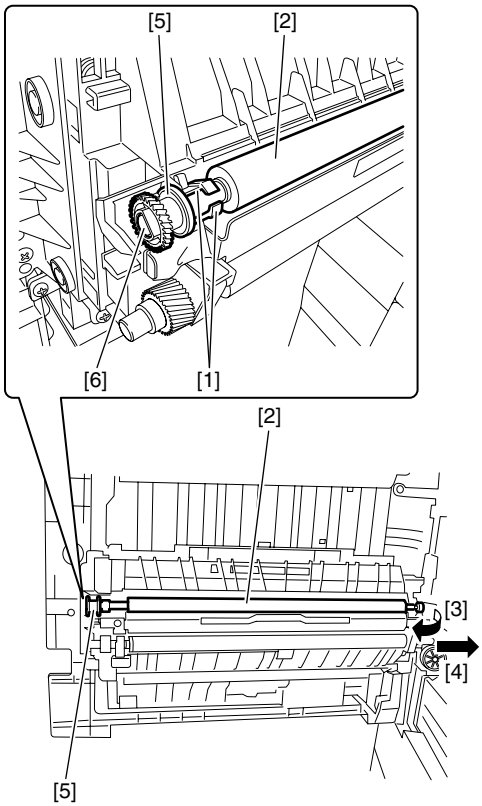
1) Open the left door.
2) Remove the transfer charging roller [1]



F-6-12

⚠
Do not touch the transfer charging roller surface.

MEMO:
The transfer charging roller bearing [1] could be the same shape as the figure below. If so, detach the transfer charging roller towards the arrow [3] and [4]. Gear [5] will come off when detaching the transfer charging roller. Be careful not to lose the gear [5]. When attaching the transfer charging roller, apply transfer charging roller D cut[6] to gear [5] D cut.



Chapter 7 Pickup and Feed System

Contents

7.1 Overview/Configuration

7.1.1 Specifications/Configuration/Operation Methods

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Functions and operation methods of the pickup/feeding system are as follows:

T-7-1

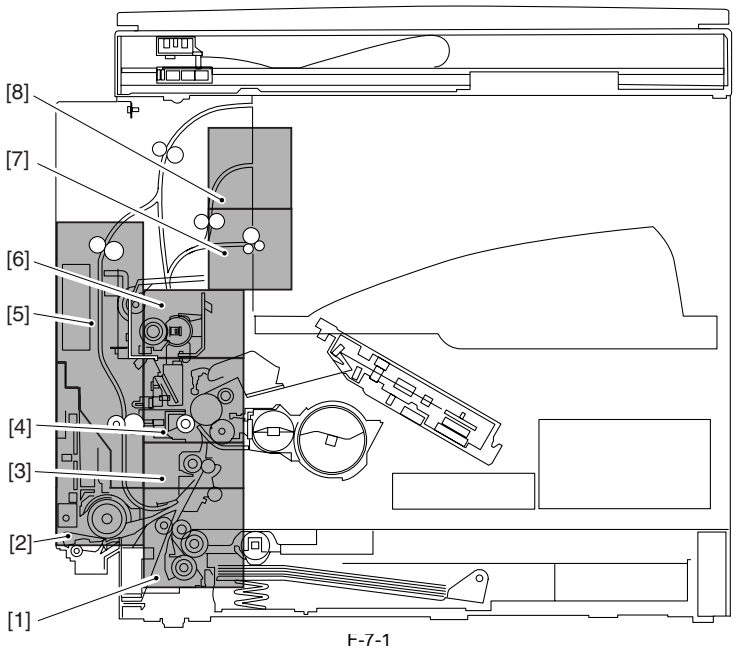
Item		Function/Operation method
Pickup method	Cassette	Claw and separation retard
	Multi manual feed tray	Separation pad
Paper stack	Cassette	Plain paper 300 sheets (64g/m2) 260 sheets (75g/m2) 250 sheets (80g/m2) 120 sheets (90g/m2) Plain paper (*1) Large 50 sheets (64g/m2) Half 100 sheets (64g/m2) Small 100 sheets (64g/m2) Large 50 sheets (75g/m2) Half 100 sheets (75g/m2) Small 100 sheets (75g/m2) Large 50 sheets (80g/m2) Half 80 sheets (80g/m2) Small 80 sheets (80g/m2) Large 50 sheets (90g/m2) Half 50 sheets (90g/m2) Small 50 sheets (90g/m2) Thick paper (*1) Large 50 sheets (105g/m2) Half 50 sheets (105g/m2) Large 35 sheets (128g/m2) Half 50 sheets (128g/m2)
	Multi manual feed tray	Label sheet 1 sheet OHP 50 sheets Envelope 10 sheets Postcard 40 sheets
Paper size Setting	Cassette	Set by user
	Multi manual feed tray	Set by user
Delivery option	Finisher-U2 Inner 2Way Tray-E2	
Pickup option	Cassette Feeding Module-P1 Cassette Feeding Module-Q1	

*1. Large: A3/B4/LDR/LGL, Half: A4/B5/A4R/B5R/LTR/LTRR, Small: A5/A5R/STMT/STMTR

7.1.2 Locations of Main Units

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Locations of main units of the pickup/feeding system are shown blow.



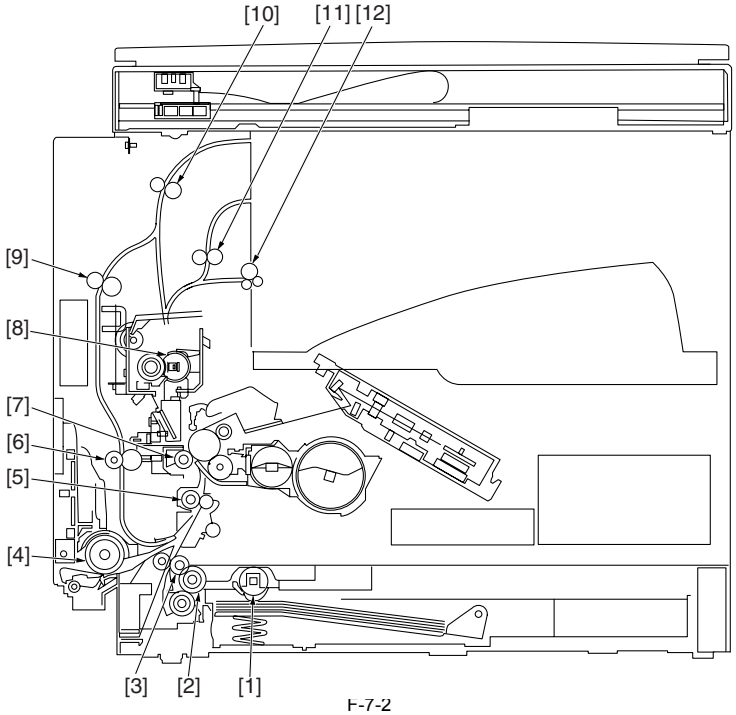
F-7-1

[1] Pickup assembly
[2] Manual feed pickup assembly
[3] Registration roller
[4] Transfer assembly
[5] Duplex paper feed assembly
[6] Fixing assembly
[7] First delivery assembly
[8] Second delivery assembly (option)

7.1.3 Roller Layout Drawing

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The layout of the rollers used in the pickup/feeding system is shown below.



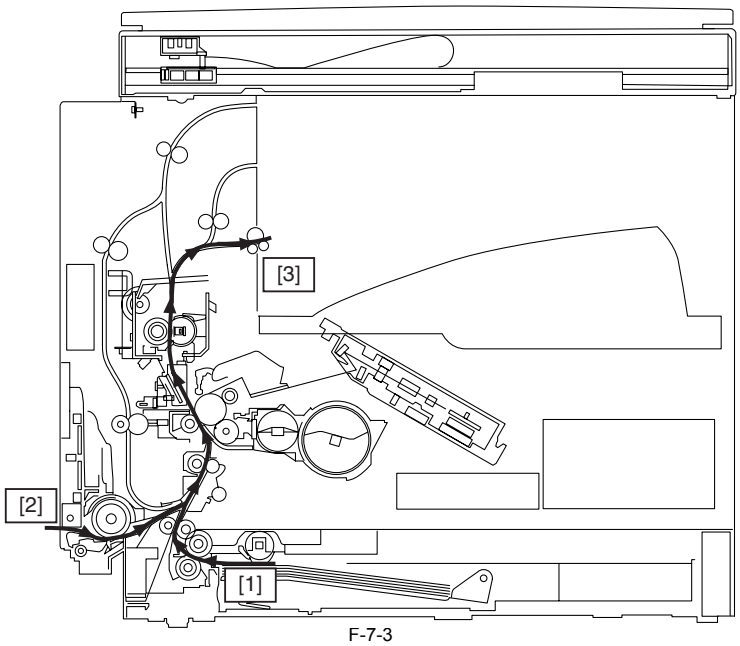
F-7-2

[1] Pickup roller
[2] Cassette pickup roller

[3] Feed roller 1
[4] Multi pickup roller
[5] Registration roller
[6] Duplex paper feed roller 3
[7] Transfer roller
[8] Fixing roller
[9] Duplex paper feed roller 2
[10] Duplex paper feed roller 1
[11] Second delivery roller
[12] First delivery roller

7.1.4 Paper Path Drawing (Printer on its own)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

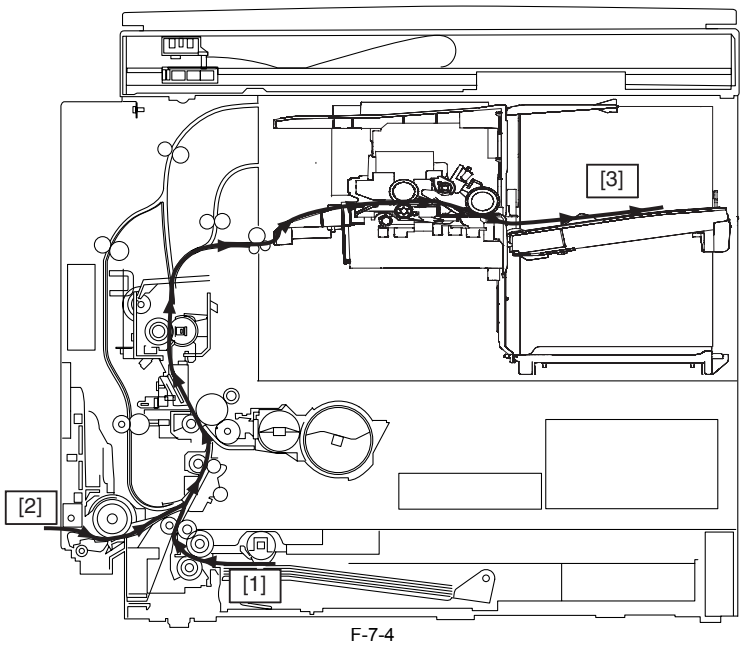


F-7-3

[1] Cassette pickup
[2] Manual feed pickup
[3] Delivery to copy tray 1

7.1.5 Paper Path Drawing (Finisher)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

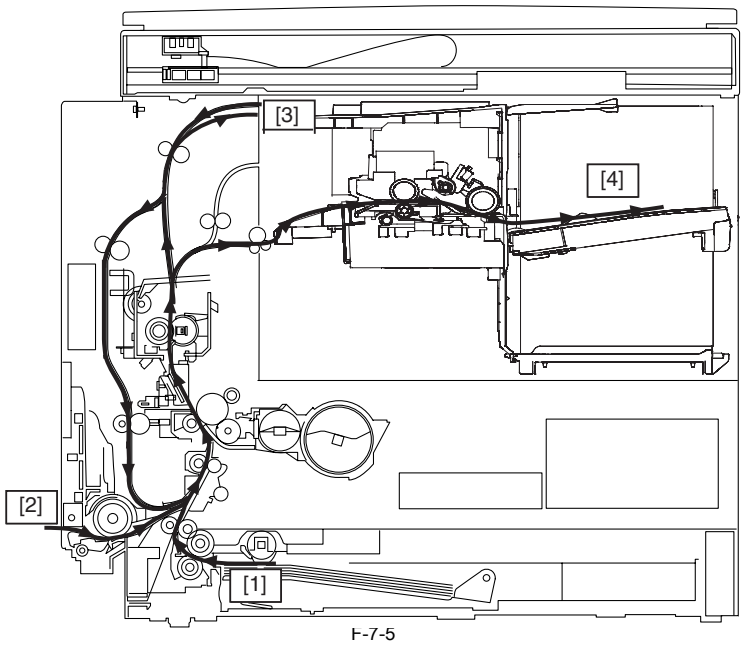


F-7-4

[1] Cassette pickup
[2] Manual feed pickup
[3] Finisher (option)

7.1.6 Paper Path Drawing (Duplex Unit/Finisher)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

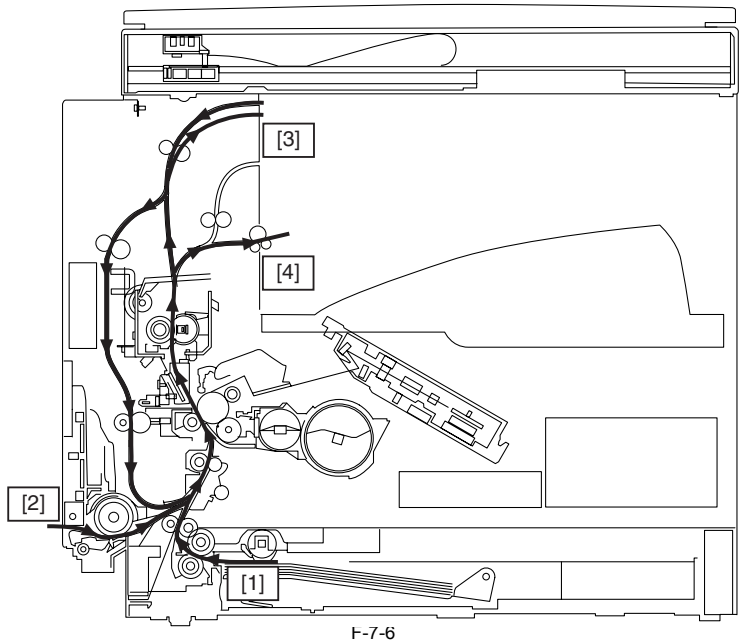


F-7-5

[1] Cassette pickup
[2] Manual feed pickup
[3] Duples paper feed assembly
[4] Finisher (option)

7.1.7 Paper Path Drawing (Duplex Unit)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

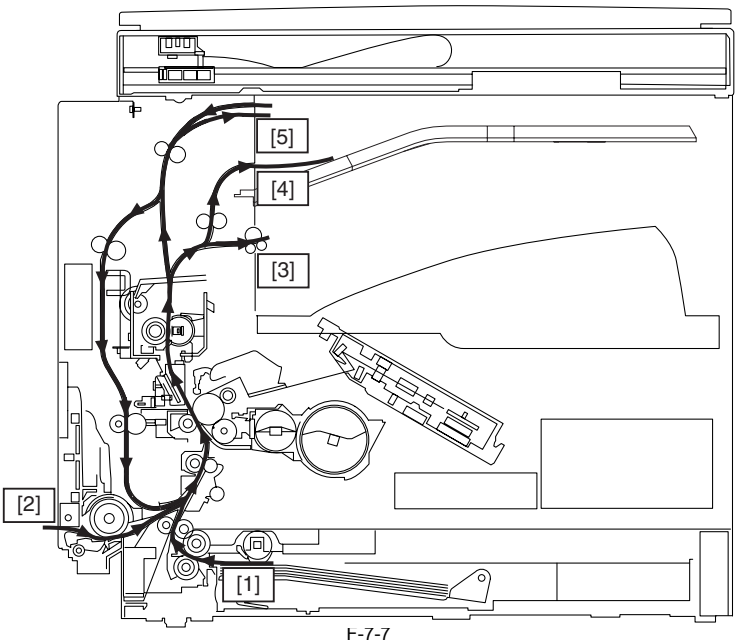


F-7-6

[1] Cassette pickup
[2] Manual feed pickup
[3] Duplex paper feed assembly
[4] Delivery to copy tray 1

7.1.8 Paper Path Drawing (Duplex/Inner 2Way Tray)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

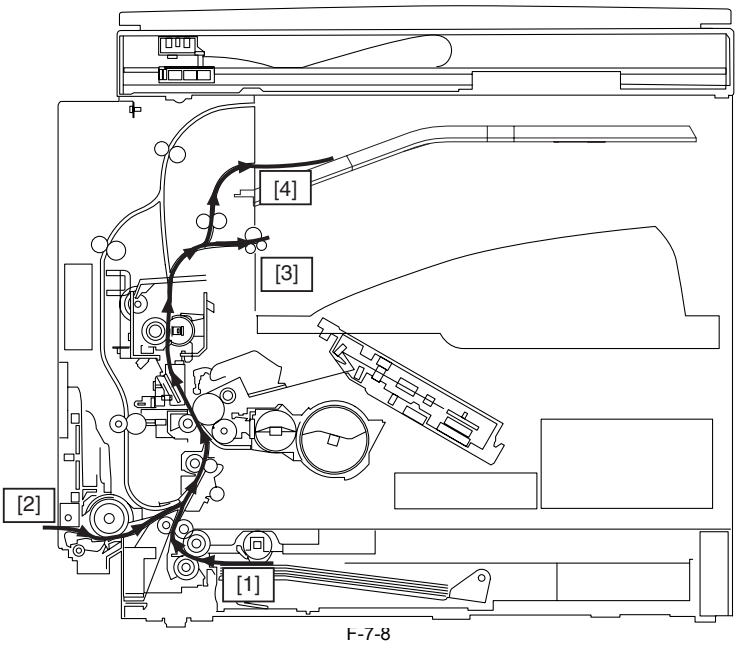


F-7-7

[1] Cassette pickup
[2] Manual feed pickup
[3] Delivery to copy tray 1
[4] Delivery to copy tray 2 (option)
[5] Duplex paper feed assembly

7.1.9 Paper Path Drawing(Inner 2Way Tray)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



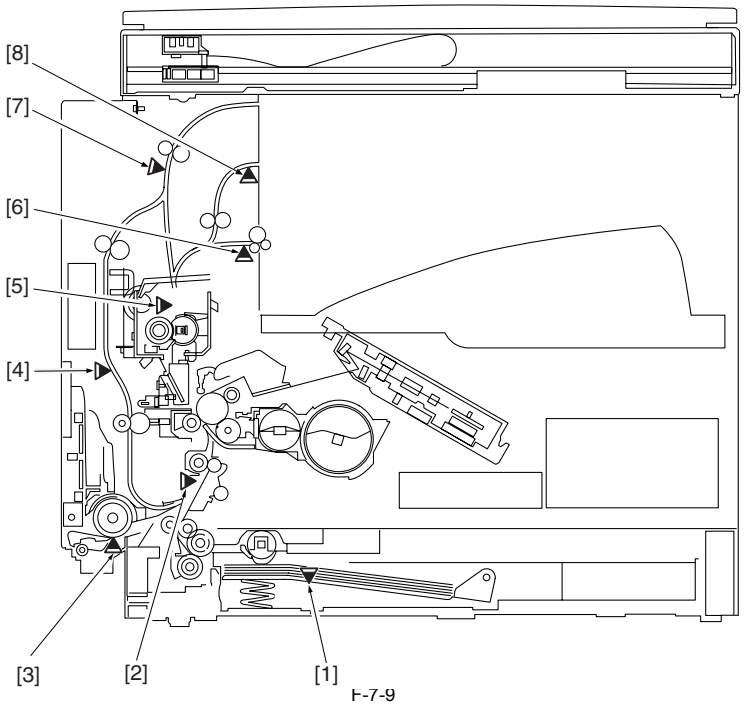
F-7-8

[1] Cassette pickup
[2] Manual feed pickup
[3] Delivery to copy tray 1
[4] Delivery to copy tray 2 (option)

7.1.10 Sensor Layout Drawing

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The layout of the sensors used in the pickup/feeding system is shown below.



F-7-9

[1] Cassette 1 paper presence/absence sensor (SR204)
[2] Registration sensor (SR209)
[3] Manual feed paper presence/absence sensor (SR208)
[4] Duplex paper sensor 2 (SR1003)
[5] Fixed paper delivery sensor (SR202)
[6] First delivery sensor (SR203)
[7] Duplex paper sensor 1 (SR1002)
[8] Second delivery sensor (SR1102) (option)

7.2 Detection Jams

7.2.1 Delay Jams

7.2.1.1 Delay Jam in Pickup Assembly

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Delay Jam in Pickup Assembly
The registration sensor cannot detect the leading edge of paper within the jam detection time interval after paper pickup started.

T-7-2

Sensor/Solenoid
Registration sensor (SR209)
Pickup solenoid (SL202)

7.2.1.2 Delay Jam in Delivery Assembly (Paper Leading Edge Jam at First Delivery Sensor/Wound Paper Jam at Fixing Assembly)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Paper Leading Edge Jam at First Delivery Sensor
The first delivery sensor cannot detect presence of paper within the prescribed time after the registration clutch has been turned on.

T-7-3

Sensor/Registration clutch
First delivery sensor (SR203)
Registration clutch (CL203)

Wound Paper Jam at Fuser
The fixing delivery sensor cannot detect presence of paper within the prescribed time after the registration clutch has been turned on.

T-7-4

Sensor/Registration clutch
Fixing delivery sensor (SR202)
Registration clutch (CL203)

7.2.2 Stationary Jams

7.2.2.1 Stationary Jam in Pickup Assembly

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Stationary Jam in Pickup Assembly
The registration sensor does not detect absence of paper within the prescribed time before the next leading edge of fed paper reaches the registration sensor.

T-7-5

Sensor
Registration sensor(SR209)

7.2.2.2 Stationary Jam in Delivery Assembly (Paper Trailing Edge Stationary Jam at First Delivery Sensor/Stationary Jam at First Delivery Sensor)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Paper Trailing Edge Stationary Jam at First Delivery Sensor
The first delivery sensor cannot detect absence of paper within the prescribed time after the registration sensor has been turned off.

T-7-6

Sensor
Registration sensor (SR209)
First delivery sensor (SR203)

Stationary Jam at First Delivery Sensor
The first delivery sensor cannot detect absence of paper within the prescribed time after it has detected the leading edge of paper.

T-7-7

Sensor
First delivery sensor (SR203)

7.2.3 Other Jams

7.2.3.1 Door Open Jam

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

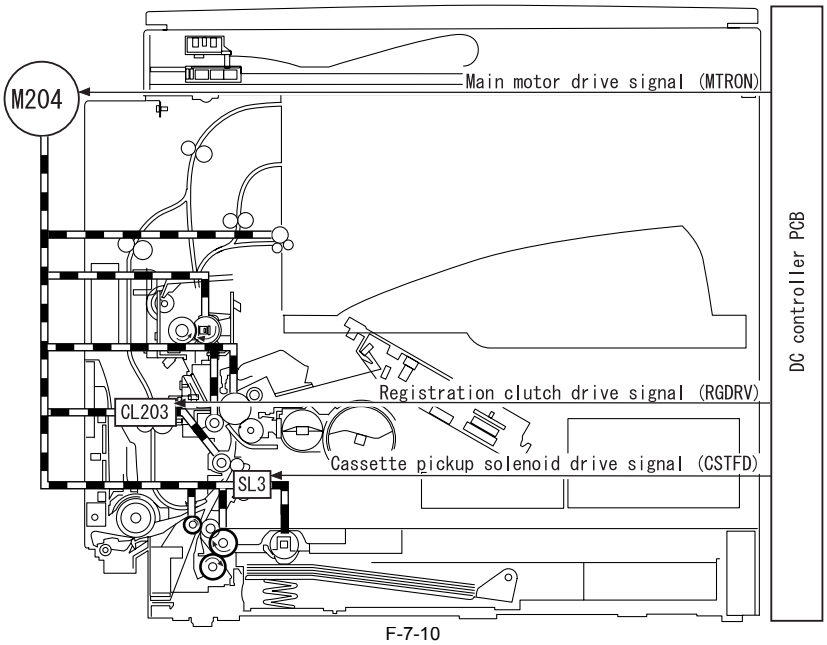
Door Open Jam
The door is opened when paper to be printed is in the paper feed path.

7.3 Cassette Pickup Unit

7.3.1 Overview

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The paper picked up from the cassette is fed to the registration roller using the vertical path roller driven by the main motor (M204). The registration roller is not rotating when paper reaches there, so an arch is formed at the leading of the paper to prevent skewing. The DC controller PCB turns on the registration clutch (CL203) at the prescribed timing to transfer the main motor rotation to the registration roller, thus feeding the paper to the delivery tray through the transfer, separation, fixing, and delivery assemblies.

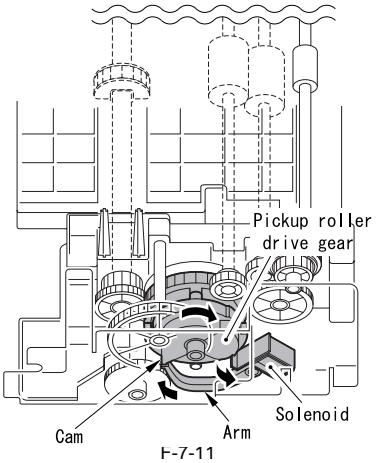


F-7-10

7.3.2 Cassette Pickup Operation

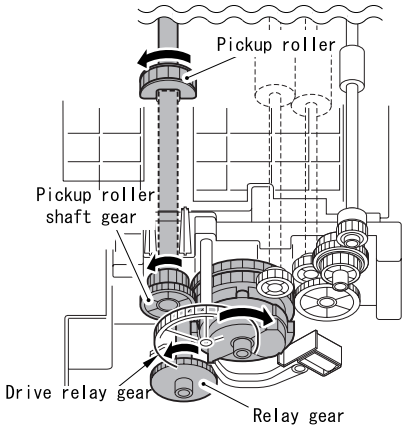
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Rotation of the pickup roller is controlled by the pickup roller drive gear, which transfers the drive power of the main motor (M204) to the pickup roller drive shaft, and the cassette pickup solenoid (SL202). When the main motor starts rotating, the interlocked relay gear also starts rotating. At this time, the pickup roller drive gear is not driven because its toothless portion is positioned at the relay gear and therefore these gears are not engaged with each other.
1) The DC controller PCB issues a cassette pickup solenoid drive signal (CSTFD). When the solenoid is turned on, the control arm pushes the cam to rotate the pickup roller drive gear slightly.



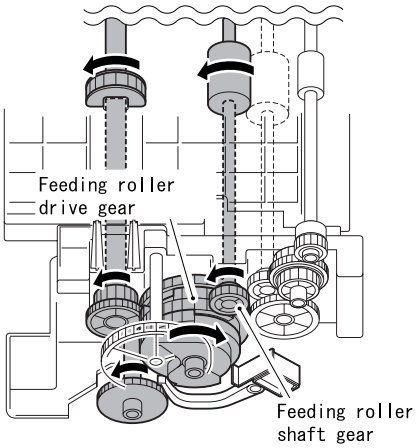
F-7-11

2) When the pickup roller drive gear is engaged with the pickup roller shaft gear, drive power is transferred to the pickup roller shaft gear and consequently the pickup roller starts rotating.



F-7-12

3) When the feed roller drive gear is engaged with the feed roller shaft gear, drive power is transferred to the feed roller shaft gear and consequently the feed roller starts rotating.
4) When the pickup roller rotates once, the toothless portion of the pickup roller drive gear comes to the position of the relay gear and consequently drive power of the main motor is not transferred, stopping the rotation of pickup and feed rollers.
5) The picked up paper is fed to the registration roller through the vertical path roller.

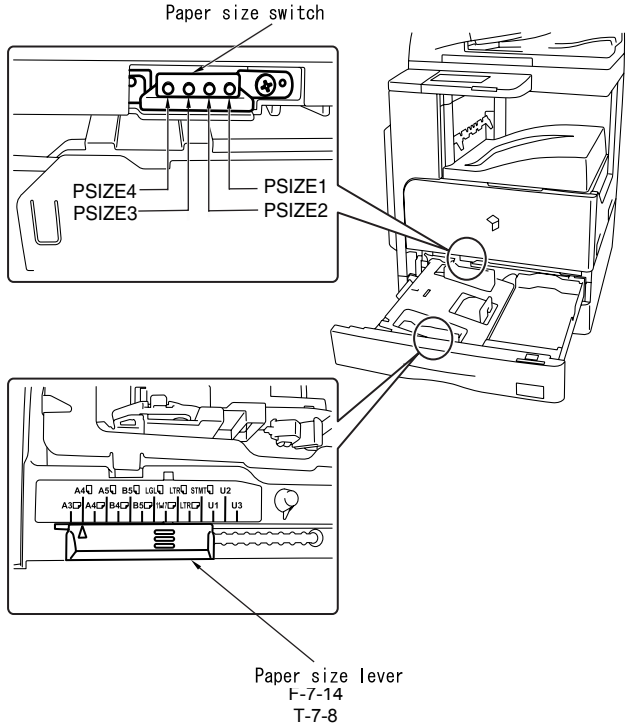


F-7-13

7.3.3 Cassette Paper Size Detection

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The size of the paper in the cassette is detected by the DC controller PCB when the user changes the position of the cassette paper size lever. When the cassette is inserted in the iR host machine, the paper size lever pushes the paper size switches provided in the iR host machine to allow the DC controller PCB to detect presence of the cassette and the size of paper. Paper size switches are arranged as shown below. Paper sizes are determined by the combinations of the switches pushed by the paper size lever.



F-7-14

T-7-8

	A3	A4	A4R	A5	B4	B5	B5R	LGL	11x17	LTR	LTRR	STMT	U1	U2	U3
PSIZE1	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	ON	OFF	OFF	OFF
PSIZE2	OFF	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	ON	OFF	OFF
PSIZE3	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	ON	OFF
PSIZE4	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	ON

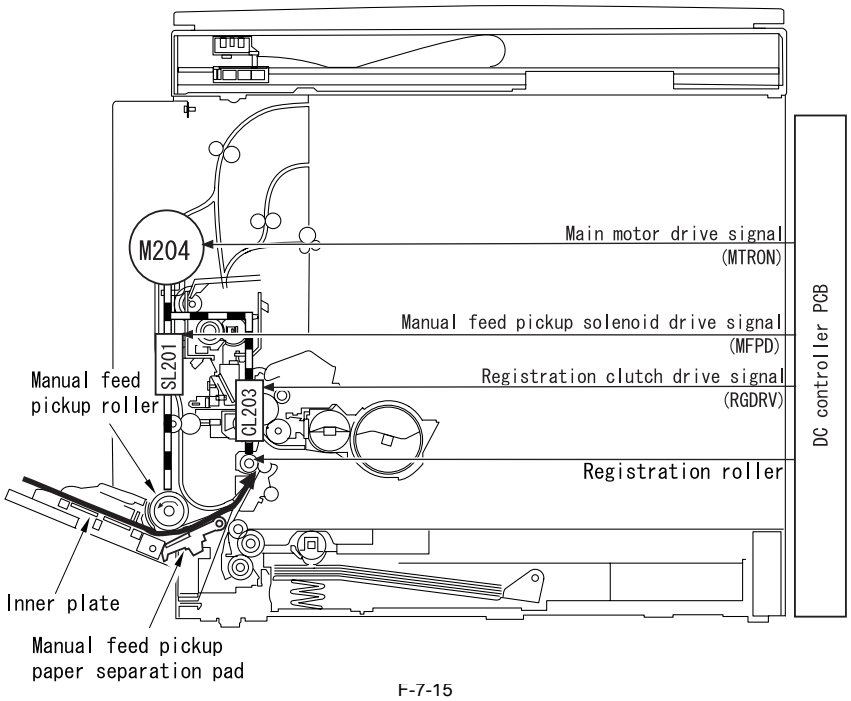
ON:The push switch is pushed.
OFF:The push switch is not pushed.
*:Not used.

7.4 Manual Feed Pickup Unit

7.4.1 Overview

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

a. Multi Manual feed Pickup Control
The manual feed pickup mechanism picks up sheets of paper in succession from the multi manual feed tray. The sheets of paper stacked in the tray are raised against the manual feed pickup roller by the inner plate. The manual feed pickup roller is driven by the main motor (M204) via the manual feed pickup solenoid (SL202) and gears. Only one sheet of paper is picked up by the combination of the manual feed pickup roller and manual feed pickup paper separation pad, and then fed to the registration roller. These operations are performed for each sheet to be picked. The user must set the size of the paper in the multi manual feed tray using the operation panel, or the user must register a fixed size in the user mode.



F-7-15

b. Inner Plate Lift Operation
During standby, the inner plate is at the down position with it held by the cams provided at the front and back of the manual feed pickup roller shaft. Rotation of the pickup roller rotates the interlocked cams to lift the inner plate, raising the sheets of paper (loaded in the manual feed tray) against the manual feed pickup roller. On the opposite side of the pickup roller is mounted a separation pad that separates only one sheet of paper from others and feeds it to the next section.
c. Manual feed Tray Pickup Drive Mechanism
pickup solenoid drive signal (MFPD) sent from the DC controller PCB. Rotation of the main motor drives the pickup drive power transfer gear. The DC controller PCB issues a manual feed pickup solenoid drive signal (MFPD). When the solenoid turns on, the stopper operates to rotate the pickup roller once. Next, the stopper operates again to stop rotation of the pickup roller.

7.4.2 Post-pickup Control after Multi Manual Feed Pickup

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Paper pickup operation ends when paper is pressed against the registration roller. After this, the registration roller starts rotating and the multi manual feed pickup clutch turns on. This clutch turns off after feeding the paper by the distance equivalent to the paper size - 126.7 mm (*1) - 5 mm (*2).

*1. Distance that paper is fed from the multi pickup roller to the point where the registration sensor turns on.
*2. Paper is post-fed to the point which is 5 mm to the training edge.

When the paper size is not specified, paper is post-fed by the distance equivalent to the multi paper feed enabled size (148 mm in longitudinal direction).
Minimum post-feed distance: 148 mm - 126.7 mm - 5 mm = 16.3 mm

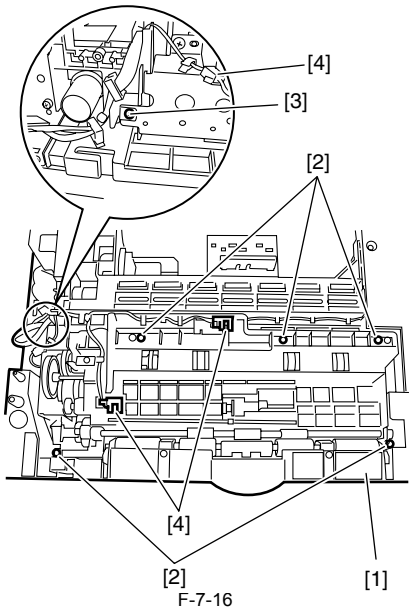
7.5 Parts Replacement Procedure

7.5.1 Cassette Pickup Assembly

7.5.1.1 Removing the Cassette Pickup Assembly

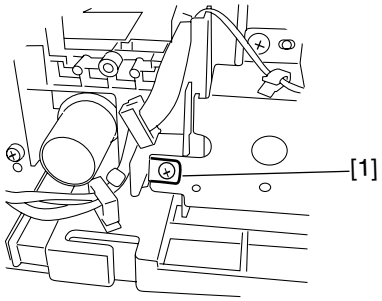
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the lower-left cover.
2) Detach the cassette rear cover.
3) Remove the cassette pickup assembly [1].
   - Screw [2], 5 pcs.
   - Screw with toothed washer [3], 1pc .
   - Connector [4], 3pcs.



F-7-16

Install the cassette pickup assembly with the ground plate [1] outside the side plate.

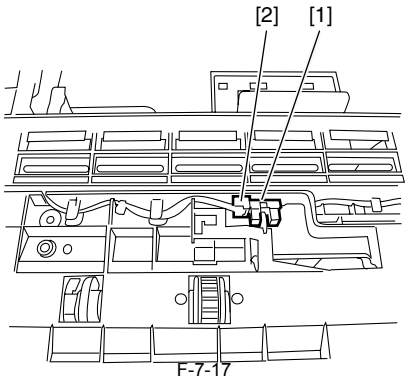


7.5.2 Cassette Paper Sensor

7.5.2.1 Removing the Cassette Paper Presence/Absence Sensor

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the lower-left cover.
2) Detach the cassette rear cover.
3) Remove the cassette pickup.
4) Remove the cassette paper presence/absence sensor [1].
   - Connector [2], 1 pc.



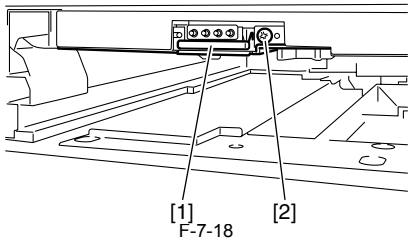
F-7-17

7.5.3 Cassette Size Sensor

7.5.3.1 Removing the Paper Size Detection Switches

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Remove the paper size switches [1].
   - Screw [2], 1 pc.



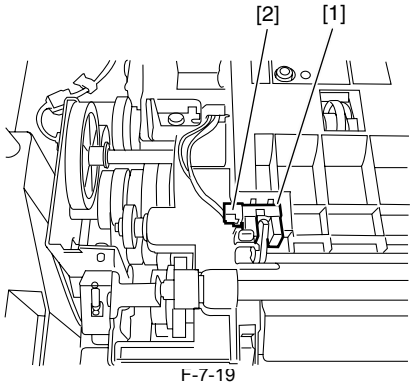
F-7-18

7.5.4 Cassette Retry Paper Sensor

7.5.4.1 Removing the Retry Sensor

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the lower-left cover.
2) Detach the cassette rear cover.
3) Remove the cassette pickup.
4) Remove the retry sensor [1].
   - Connector [2], 1 pc.



F-7-19

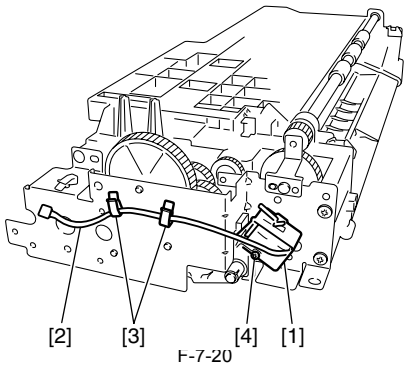
7.5.5 Cassette Pickup Solenoid

7.5.5.1 Removing the Cassette Pickup Solenoid

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the lower-left cover.
2) Detach the cassette rear cover.
3) Remove the cassette pickup.

4) Remove the cassette pickup solenoid [1].
- Harness [2], 1 pc.
- Wire saddles [3], 2 pcs.
- Screw [4], 1 pc.



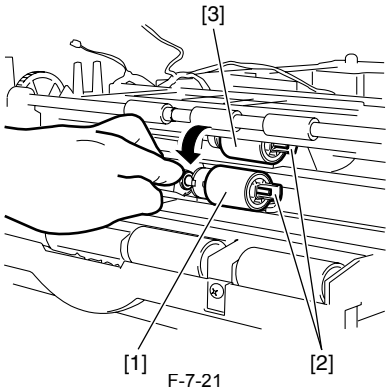
F-7-20

7.5.6 Separation Roller

7.5.6.1 Removing the Feed and Separation Rollers

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Remove the cassette.
2) Open the lower-left cover.
3) Lower the separation roller [1] as shown below, and then remove the separation roller [1] and feed roller [3] by holding the claws [2] of the roller collars.



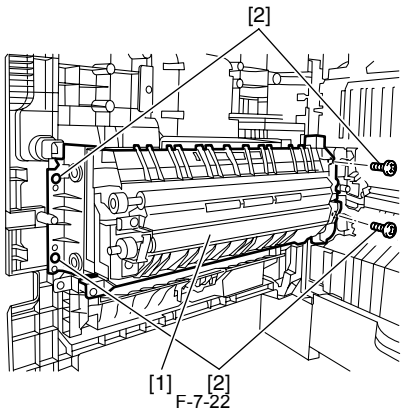
F-7-21

7.5.7 Manual Pickup Roller

7.5.7.1 Removing the Multifeeder Pickup Roller

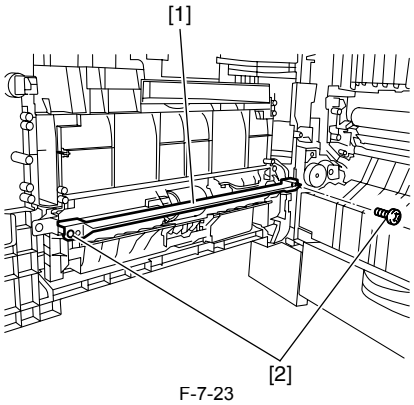
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the front cover.
2) Turn the developer pressure release lever clockwise, and then open the left door.
3) Draw out the drum unit.
4) Remove the transfer registration unit [1].
- Screw [2], 4 pcs.



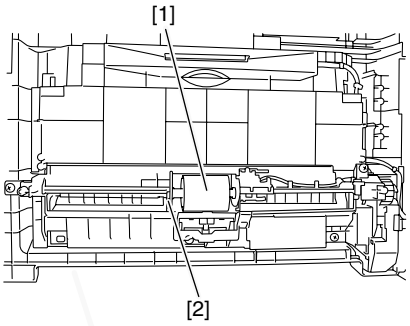
F-7-22

5) Remove the feed guide [1].
- Screw [2], 2 pcs.



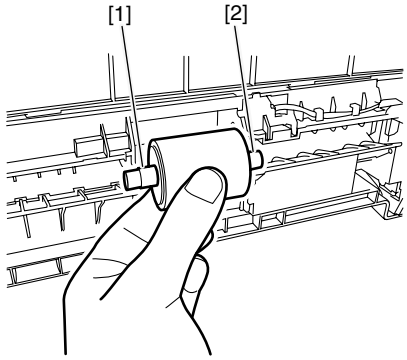
F-7-23

6) Remove the multi-paper roller [1].
- Bearing [1], 1 pc.



F-7-24

When installing the multifeeder pickup roller, pay attention to the orientation.
Left-side axis: [1] Long Right-side axis: Short [2]



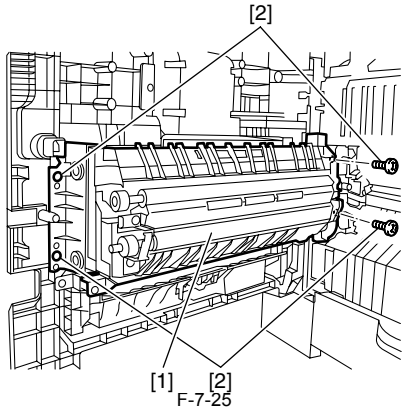
7.5.8 Manual Feed Tray Paper Sensor

7.5.8.1 Removing the Multifeeder Paper Presence/ Absence Sensor

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

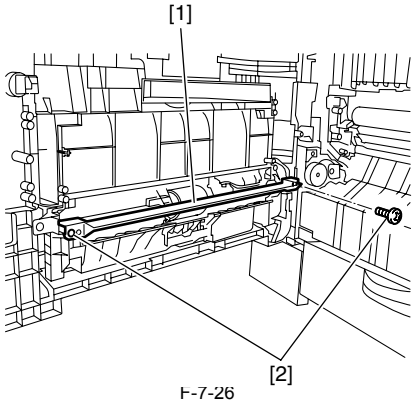
1) Open the front cover.
2) Turn the developer pressure release lever clockwise, and then open the left door.
3) Draw out the drum unit.

4) Remove the transfer registration unit [1].
- Screw [2], 4 pcs.



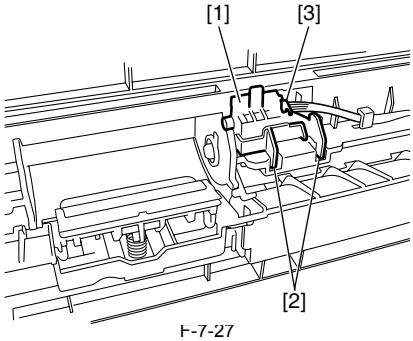
F-7-25

5) Remove the feed guide [1].
- Screw [2], 2 pcs.



F-7-26

6) Remove the multifeeder paper presence/absence sensor [1].
- Claw [2], 2 pcs.
- Connector [3], 1 pc.



F-7-27

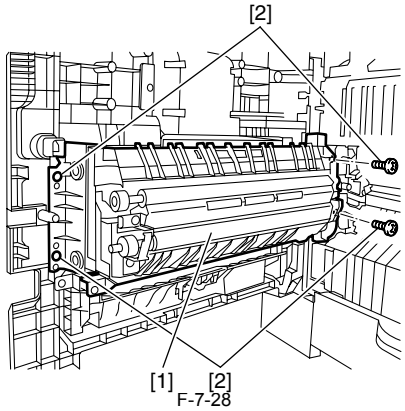
7.5.9 Manual Pickup Solenoid

7.5.9.1 Removing the Multifeeder Pickup Solenoid

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

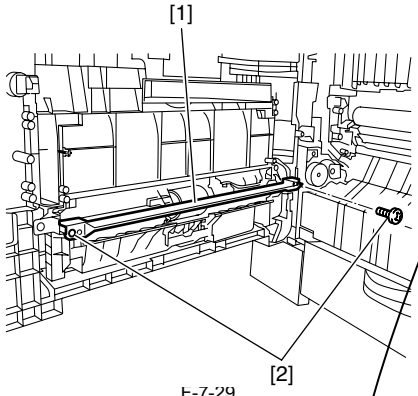
1) Open the front cover.
2) Turn the developer pressure release lever clockwise, and then open the left door.
3) Draw out the drum unit.

4) Remove the transfer registration unit [1].
- Screw [2], 4 pcs.



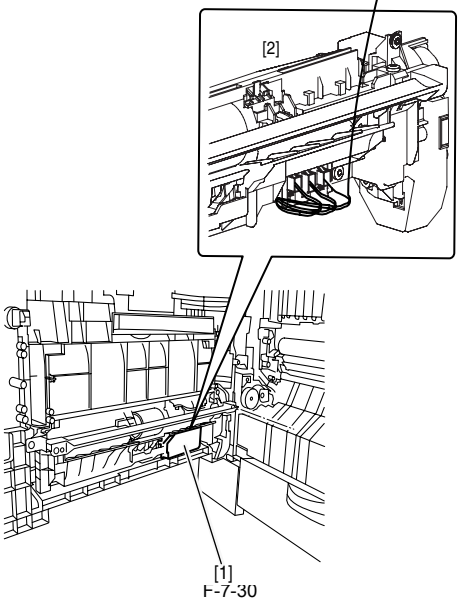
F-7-28

5) Remove the feed guide [1].
- Screw [2], 2 pcs.



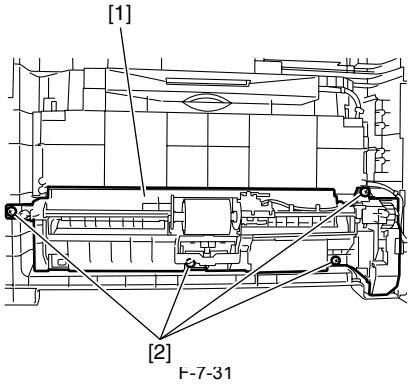
F-7-29

6) Detach the multifeeder connector cover [1].
- Connector [2], 3 pcs.



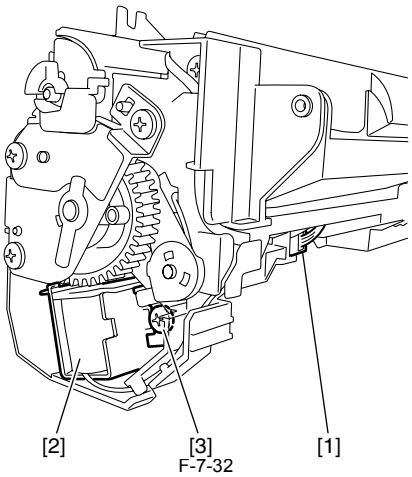
F-7-30

7) Remove the multifeeder unit [1].
- Screw [2], 4 pcs.



F-7-31

8) Remove the harness from the guide.
- connector [1], 1 pc.
9) Remove the multifeeder pickup solenoid [2].
- Screw [3], 1 pc.



F-7-32

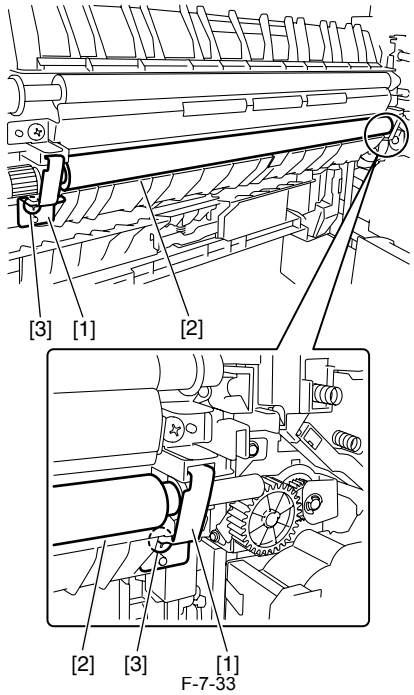
7.5.10 Registration Roller

7.5.10.1 Removing the Registration Roller

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the front cover.
2) Turn the developer pressure release lever clockwise, and then open the left door.
3) Draw out the drum unit.

4) Remove the two metal plates [1], and remove the registration roller [2].
- Screw [3], 2 pcs.



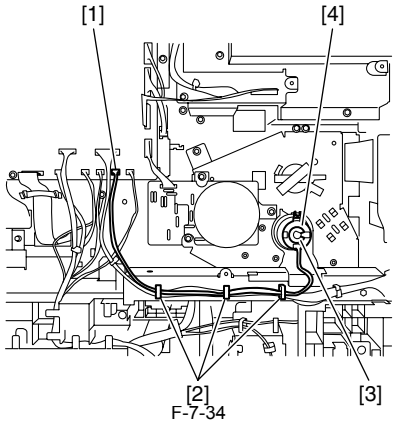
F-7-33

7.5.11 Registration Clutch

7.5.11.1 Removing the Registration Clutch

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1)Detach the rear cover.
2) Disconnect the connector [1], and then remove the harness from the three wire saddles [2].
3) Remove the resin ring [3], and then remove the registration clutch [4].



F-7-34

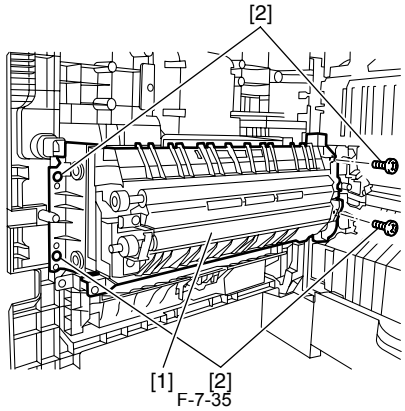
7.5.12 Separation Pad

7.5.12.1 Removing the Separation Pad

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

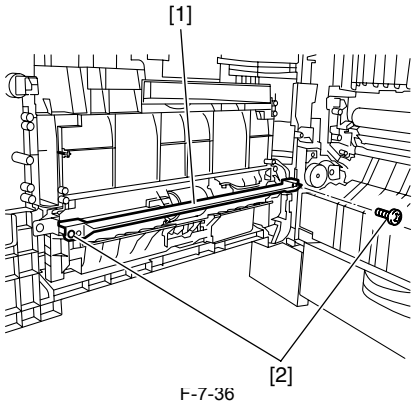
1) Open the front cover.
2) Turn the developer pressure release lever clockwise, and then open the left door.
3) Draw out the drum unit.

4) Remove the transfer registration unit [1].
- Screw [2], 4 pcs.



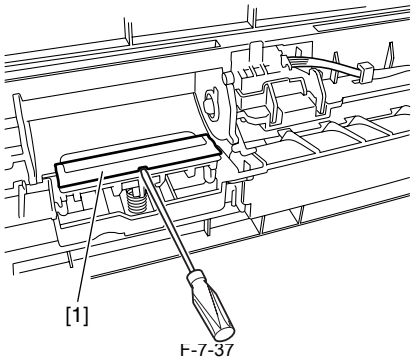
F-7-35

5) Remove the feed guide [1].
- Screw [2], 2 pcs.



F-7-36

6) Remove the multi-paper roller.
7) I use a minus screwdriver and remove separation pad [1].



F-7-37

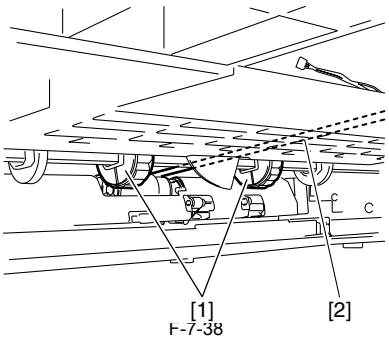
7.5.13 Pickup Roller

7.5.13.1 Removing the Cassette Paper Pickup Roller

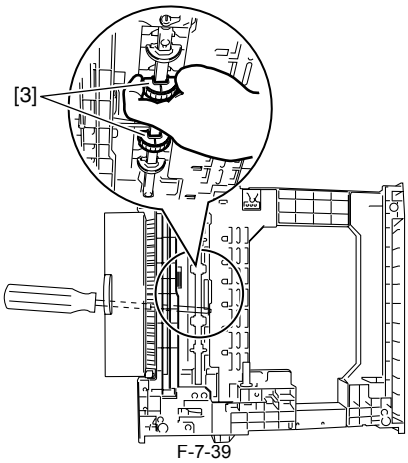
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Remove the cassette.
2) Open the lower-left cover.

3) With the pickup roller [1] down, insert a screwdriver [2] or the like from the left side of the host machine as shown below.
4) Remove the pickup roller [3] with your fingers as shown below.



F-7-38



F-7-39

Chapter 8 Fixing System

Contents

8.1 Overview/Configuration

8.1.1 Specifications, Control Mechanisms and Functions

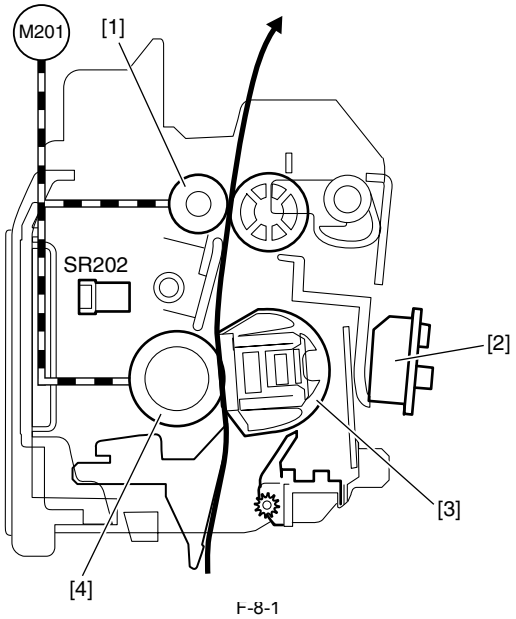
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-8-1

Item	Function/Method
Fixing method	by fixing film + pressure roller
Fixing heater	Unitary flat heater incorporating both main heater and sub heater
Fixing temperature detection	[1] Main thermistor (TH1): Temperature control and fault detection
	[2] Sub thermistor (TH2): Fault detection
	[3] Thermo-switch (TP1): Fault detection
Fixing temperature control	[1] Warm-up temperature control
	[2] Normal temperature control
	[3] Sheet-to-sheet temperature control
Protection functions	[1] Detection of error in temperature control by thermistor
	[2] Detection of temperature rise by thermo-switch
Fixing drive control	Speed control by detecting fixing film rotation

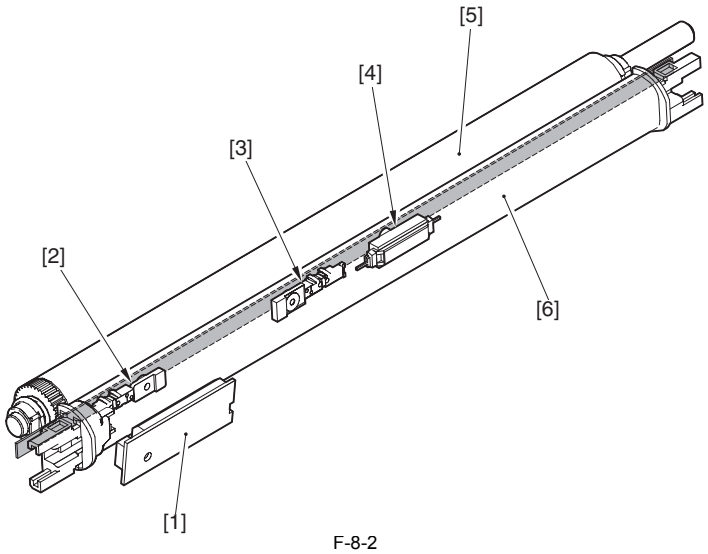
8.1.2 Major Components

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-8-1

[1]	Inner delivery roller	[4]	Pressure roller
[2]	Fixing film speed sensor	SR202	Fixing delivery sensor
[3]	Fixing film unit	M201	Fixing drive motor



F-8-2

[1]	Fixing film speed sensor	[4]	Thermo-switch (TP1)
[2]	Sub thermistor (TH2)	[5]	Pressure roller
[3]	Main thermistor (TH1)	[6]	Fixing film unit

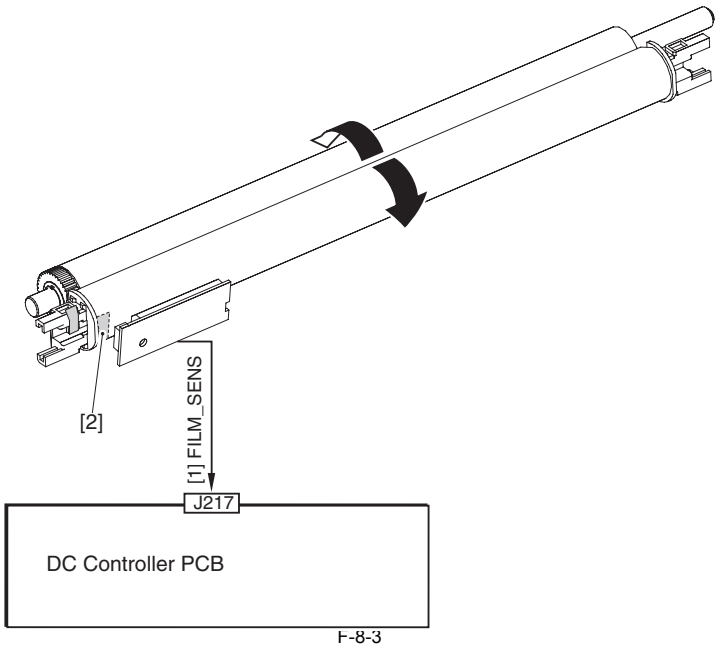
8.2 Various Control Mechanisms

8.2.1 Controlling the Speed of the Fixing Film

8.2.1.1 Controlling the Fixing Film Speed

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The rotation cycle is measured with reference to the mark provided at the end of the fixing film to rotate the fixing drive motor at the optimum speed, thus keeping the paper feed speed constant. Measurement of the cycle of each rotation (excluding the initial rotation and post-rotation) of the fixing drive motor starts when 1 second lapses after the motor starts rotating and ends when the trailing edge of the last sheet has passed through the fixing nipper.



F-8-3

[1] Film rotation detection signal (FILM_SENS): Set to 1 and 0 alternately when the fixing film is rotating.
[2] Rotation cycle measurement mark

8.2.2 Controlling the Fixing Film Temperature

8.2.2.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The surface temperature of the fixing heater is detected to control the fixing heater drive signal so that the fixing heater temperature becomes the target temperature. The temperature of the fixing heater is detected by the thermistor (TH1/TH2) provided on the fixing heater. If the surface temperature rises, the resistance of the thermistor lowers and the voltage of the fixing heater temperature detection signal (M_TH/S_TH) also lowers.
The CPU on the DC controller monitors the voltage of the M_TH/S_TH signal to control the fixing heater 1 drive signal (H1DRV) and fixing heater 2 drive signal (H2DRV). These two voltages are generated based on the zero crossing detection signal which is output from the heater control circuit. The CPU controls these two signals to adjust the fixing heater temperature to the prescribed value.

8.2.2.2 Controlling the Fixing Film Temperature

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This machine performs fixing temperature control according to the fixing heater temperature as mentioned below.
1) Warm-up temperature control
Upon receipt of a print command from the DC controller, the fixing heater heats to the temperature below the target paper-present section temperature.
2) Paper-present section temperature control
The fixing heater temperature is adjusted to the target paper-present section temperature according to the combination of the paper size, number of sheets fed, fixing mode, and temperature detected by the fixing main thermistor.
3) Sheet-to-sheet temperature control
The fixing heater temperature is held relatively below the target paper-present section temperature to prevent the paper-absent section temperature from rising between sheets.
4) Down sequence
The temperature may detect an abnormally high temperature during continuous printing. If the sub-thermistor detects a temperature equal to or higher than 275 deg C, the sheet-to-sheet distance is increased to prevent the paper-absent section temperature from rising. If the sub-thermistor detects a temperature equal to or lower than 220 deg C in the down sequence, normal control resumes.
5) Cooling mode
If printing is performed using wider sheets (*1) after printing is performed using narrower sheets in the continuous print mode, fixing offset may occur due to the difference in temperature between the edge and center. If the sub-thermistor detects a temperature equal to or higher than 130 deg C, paper feed and printing stop to prevent the temperature from rising at the edge. If the sub-thermistor detects a temperature equal to or lower than 130 deg C or two or more minutes lapse, normal control resumes.
*1: The large size is a paper of which the width is 10 mm larger than the previous job.

8.2.2.3 Target Temperatures by Mode

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This machine controls the fixing temperature according to the "media type" selected in the user mode and the "target temperature" set in the "special mode." The correspondence between each mode and target temperature is as follows:

T-8-2

Fixing mode	Paper type	Target initial fixing temperature (*1)	Initial number of sheets (*2)	Condition
Normal	Plain paper (colored paper/ recycled paper/label sheet (64-80 g/m2)	201 deg C	1-12 (A4/LTR)	Special Mode P: Off
		191 deg C	1-12 (A4/LTR)	Special Mode P: Medium
		181 deg C	1-12 (A4/LTR)	Special Mode P: High
Rough Paper Lo	Heavy paper 1 (81-90 g/m2)	206 deg C	1-12 (A4/LTR)	
	Heavy paper 2 (91-105g/m2)			
Rough Paper	Heavy paper 3 (106-128g/m2)	220 deg C	1-25 (A4/LTR)	
Super rough paper	Bond paper	220 deg C	1-100 (A4/LTR)	Bond SP. FIX. Mode: OFF
Super rough paper Hi	Bond paper	220 deg C	1-100 (A4/LTR)	Bond SP. FIX. Mode: ON
Postcard	Postcard	220 deg C	1-12	Fix. Unit Offset: OFF
Postcard H	Postcard	220 deg C	1-7	Fix. Unit Offset: 1 or 2
Envelope	Envelope	220 deg C	1-10	
OHP	OHP	181 deg C	1-12 (A4/LTR)	

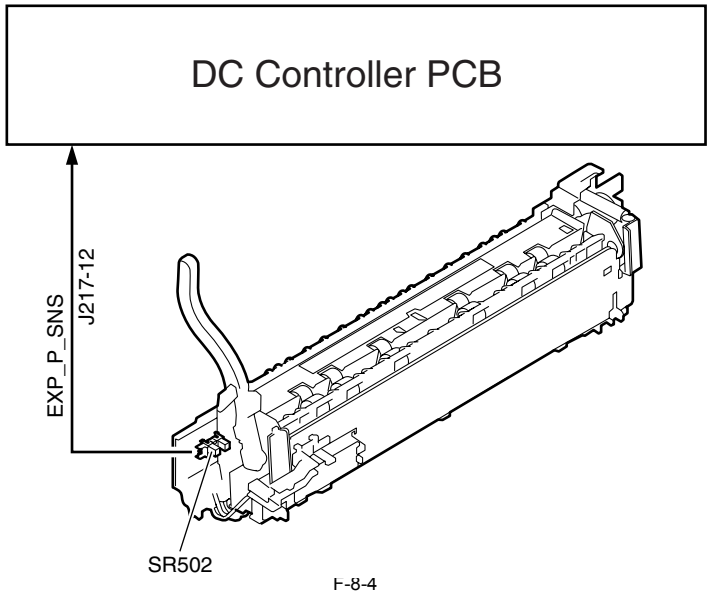
*1: Target fixing temperature at startup. When the initial temperature of the fixing unit is high, the target temperature is lowered. In the continuous copy mode, the target temperature is lowered in 5 deg C steps.
*2: Number of sheets controlled at the initial target temperature. If it is exceeded, the target temperature is lowered. The prescribed number of sheets varies with the paper size.

8.2.3 Detecting the Passage Paper

8.2.3.1 Detecting the Passage of Paper

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The paper passage detection mechanism of the fixing unit is shown below.



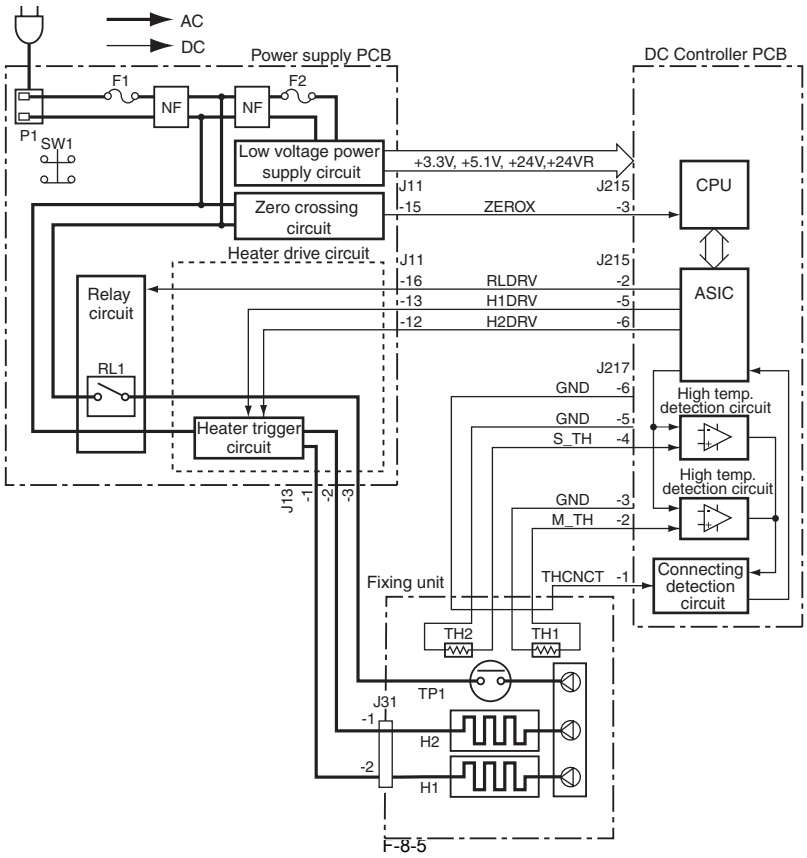
F-8-4

If a delay jam is detected by the fixing delivery sensor (SR202), the fixing motor is stopped immediately to prevent paper from winding around the fixing roller.

8.3 Protection Function

8.3.1 Protective Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-8-5

Protection Functions

This machine is provided with the following four protection functions to prevent the fixing heater from overheating:

1) The CPU monitors the thermistor (TH1) voltage. If the thermistor (TH1) voltage is abnormal, the CPU judges that the fixing heater is faulty and turns off the relay (RL1). At the same time, the CPU notifies the DC controller of occurrence of the fixing heater failure.
2) If the temperature of the fixing heater rises abnormally and the thermistor (TH1) detects a voltage lower than about 0.7 V (equivalent of 240 deg C), the fixing heater high temperature detection circuit cuts off the power supplied to the fixing heater.
3) If the temperature of the fixing heater rises abnormally and the thermo switch (TP1) detects a temperature higher than 250 deg C, the thermo switch turns off to cuts off the power supplied to the fixing heater.

Failure Detection

The CPU performs error detection at intervals of 40 msec. If any one of the cases a to d occurs, the CPU stops the machine completely. To restart the machine, remove the cause of the failure and carry out initial rotation. If a failure is detected, an error code "EXXX" is displayed on the operation panel.

MEMO:

In case of this machine, the detail code of the error code of this machine can be confirmed in the following service mode.
Service mode > ERROR DISPLAY

---

a. Failure at startup

1) The main thermistor has detected temperatures lower than 30 deg C continuously for 400 or more msec since 1 second lapsed after energization of the fixing heater.
2) The main thermistor has detected temperatures lower than 70 deg C continuously for 400 or more msec since 2 seconds lapsed after energization of the fixing heater.
3) The sub-thermistor has detected temperatures lower than 75 deg C continuously for 400 or more msec since 5 seconds lapsed after energization of the fixing heater.
4) The temperature rise detected by the main thermistor is less than 5 deg C when energization of the fixing heater starts, when the temperature detected by the main thermistor is less than 100 deg C, or when 1 sec has lapsed since start of energization.
5) The main thermistor has detected temperatures less than 115 deg C continuously for 400 or more msec since 1 second has lapsed after detection of 100 deg C.
6) The main thermistor has detected temperatures less than 150 deg C continuously for 400 or more msec since 1 second has lapsed after detection of 140 deg C.
7) The main thermistor has detected temperatures less than 165 deg C continuously for 400 or more msec since 1 second has lapsed after detection of 160 deg C.
8) The target printing temperature is not reached when 30 seconds have lapsed since start of the initial rotation.

b. Low temperature detection during temperature control

During temperature control, the main or sub thermistor has detected low temperatures continuously for 400 or more msec after the target temperature was reached.

c. Abnormally high temperature detection

1) The main thermistor has detected 240 C deg irrespective of whether the fixing heater is of or off.
2) The sub thermistor has detected 295 deg C irrespective of whether the fixing heater is of or off.

d. Drive circuit failure

1) The zero crossing signal frequency of the power supply has not been detected during initial rotation.
2) During temperature control, no zero crossing signal has been input for 3 seconds.
3) A triac short circuit has been detected in the ASIC.
4) An abnormally high temperature has been detected in the ASIC.

5) A lock condition has been detected in the fixing motor.

Fixing System Error Codes
E000-0000 STARTUP ERROR
The temperature detected by the main and sub thermistors did not reach the prescribed temperature during startup control.
E001-0000 ABNORMALLY HIGH TEMPERATURE (detected by main thermistor)
The main thermistor detected an abnormally high temperature (250 deg C) during temperature control.
E001-0001 ABNORMALLY HIGH TEMPERATURE (detected by sub thermistor)
The sub thermistor detected an abnormally high temperature (295 deg C) during temperature control.
E002-0000 LOW TEMPERATURE DETECTED DURING TEMPERATURE CONTROL
The main and sub thermistors detected an abnormally low temperature (140 deg C) during temperature control.
E003-0000 ABNORMALLY LOW TEMPERATURE (detected by main thermistor)
The temperature detected by the main thermistor does not reach the target temperature during initial rotation after it has reached the target temperature.
E003-0001 ABNORMALLY LOW TEMPERATURE (detected by sub thermistor)
The temperature detected by the sub thermistor does not reach the target temperature during initial rotation after it has reached the target temperature.
E007-0000 ABNORMALLY ROTATION of FIXING FILM (detected by fixing film speed sensor)
A fixing film rotation failure has been setected.
E808-0000 DRIVE CIRCUIT FAILURE
A zero crossing signal cannot be detected.
A fixing drive motor failure has been detected.

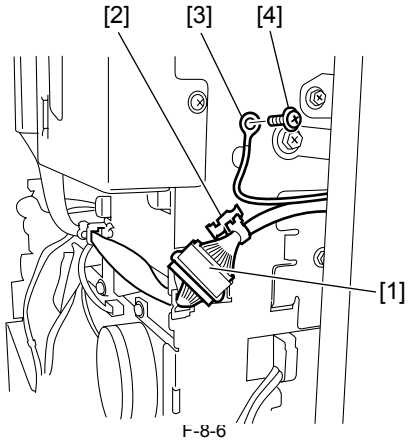
8.4 Parts Replacement Procedure

8.4.1 Fixing Unit

8.4.1.1 Removing the Fixing Unit

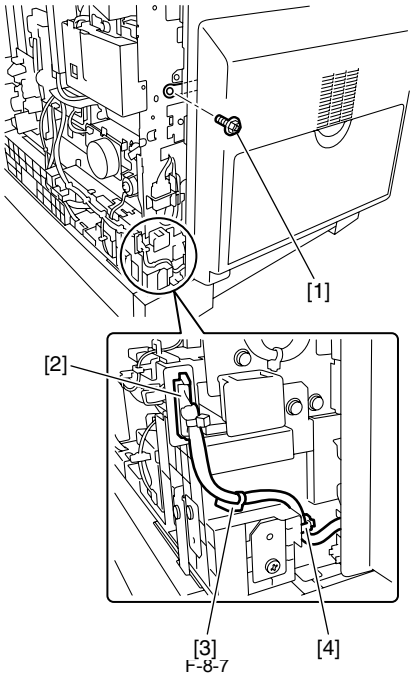
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Draw out the drum unit.
2) Detach the rear cover.
3) detach the left cover (rear).
4) Disconnect the connector [1] of the junction harness and remove the reusable band [2], then remove the earth wire [3].
   - Screw [4], 1 pc.



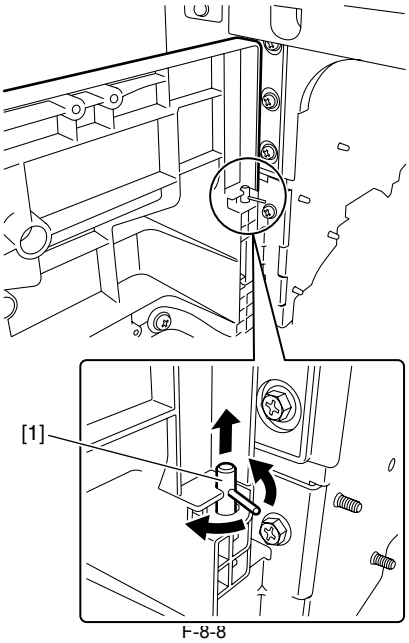
F-8-6

5) Remove the screw [1] securing the door support band. Remove the connector [2] and reusable band [3], and release the duplex unit harness from the wire saddle [4].



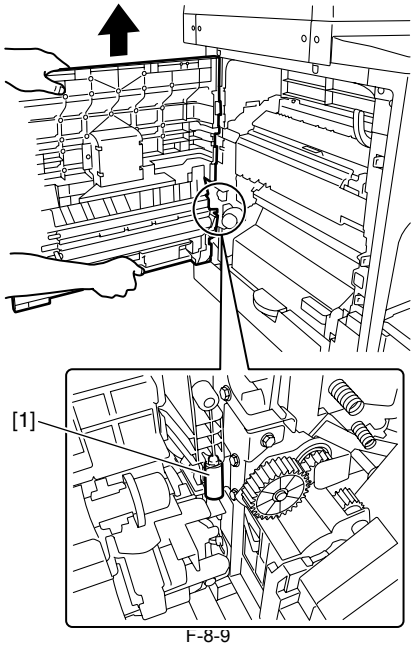
F-8-7

6) Open the left door until it sops and pull out the hinge shaft [1].



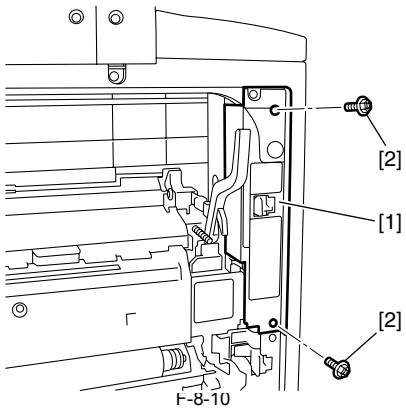
F-8-8

7) Lift the left door with both hands to release it from the door rotation shaft [1], and then remove the left door.



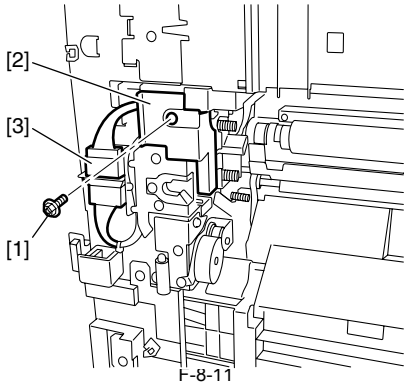
F-8-9

8) Detach the inner cover [1] at the upper front.
- Screw [2], 2 pcs.



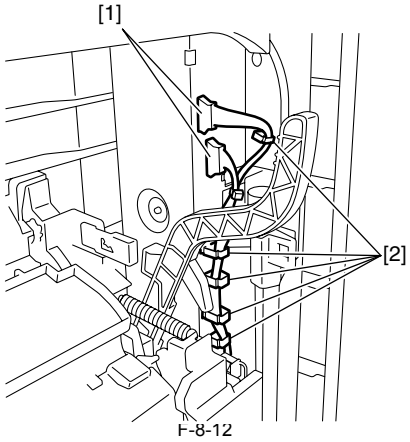
F-8-10

9) Detach the heater harness cover [2]. Disconnect the connector [3].
- Screw [1], 1 pc.



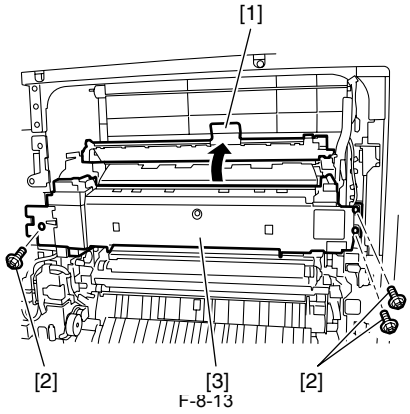
F-8-11

10) Disconnect the two connectors [1], and then release the fixing unit harness from the wire saddles [2].



F-8-12

11) Raise the delivery upper guide [1]. Remove the fixing unit [3].
- Screw [2], 3 pcs.



F-8-13

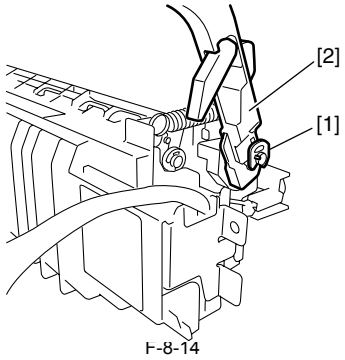
8.4.2 Fixing Film Unit

8.4.2.1 Removing the Fixing Film Unit

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

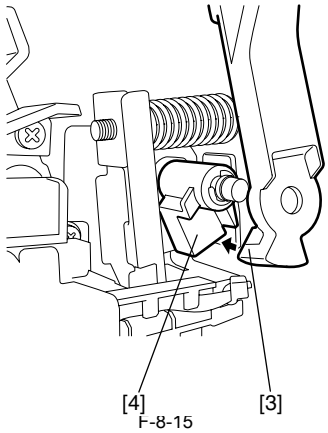
1) Remove the fixing unit.

2) Remove the fixing pressure release lever [2].
- Resin ring [1]



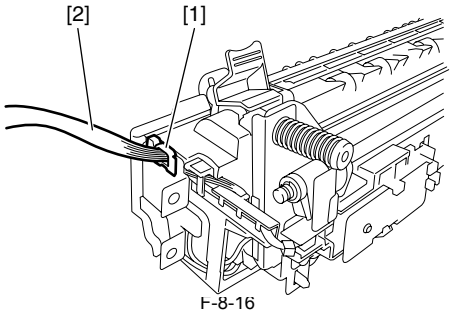
F-8-14

When installing the fixing pressure release lever, check that the rib [3] of the lever is inside the pressure block [4].



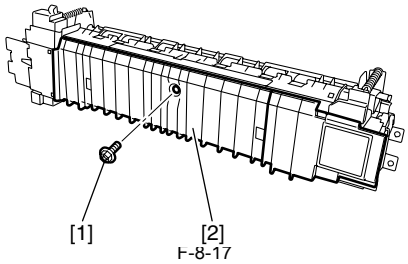
F-8-15

3) Release the fixing unit harness [2] from the wire saddle [1].



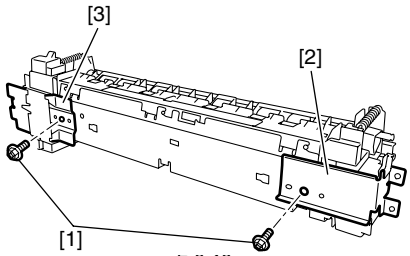
F-8-16

4) Remove the fixing paper guide [2].
- Screw [1], 1 pc.



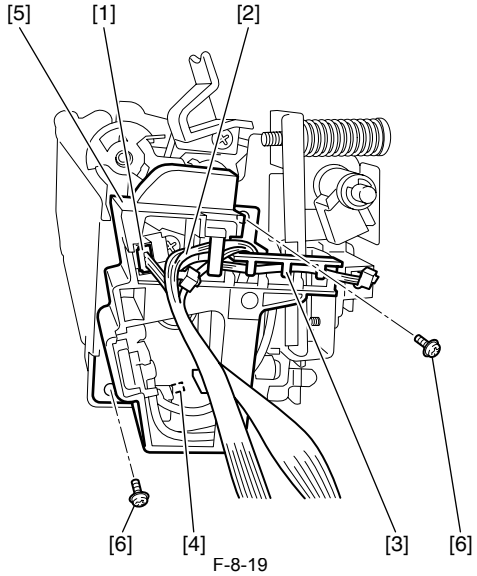
F-8-17

5) Remove the right side stay [1] and left side stay [2].
- Screw [1], 2 pcs.



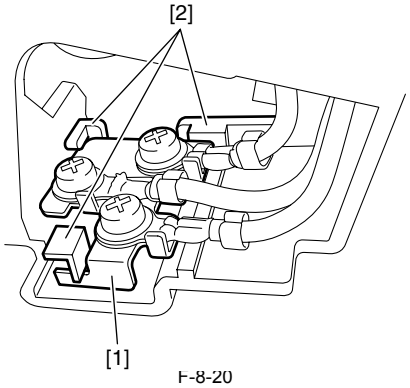
F-8-18

6) Disconnect the connector [1] and release the fixing DC harness [2] from the harness guide [3]. Unhook the claw [4] and remove the sensor holder [5].
- Screw [6], 2 pcs.



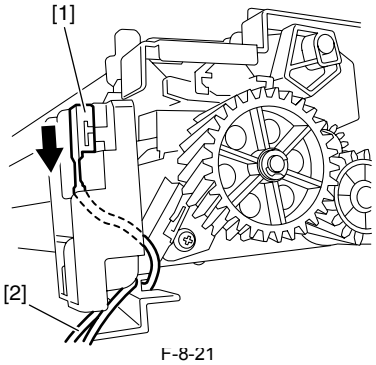
F-8-19

When installing the electrode plate [1], place it under the three claws [2] as shown below.



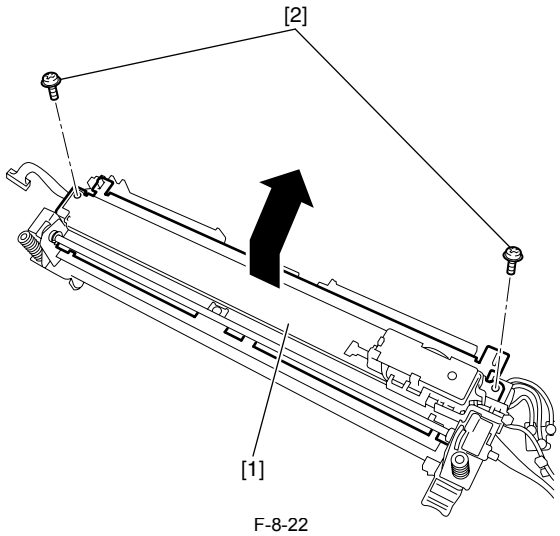
F-8-20

7) Remove the ground cable [1] from the holder, and then free the fixing unit AC harness.



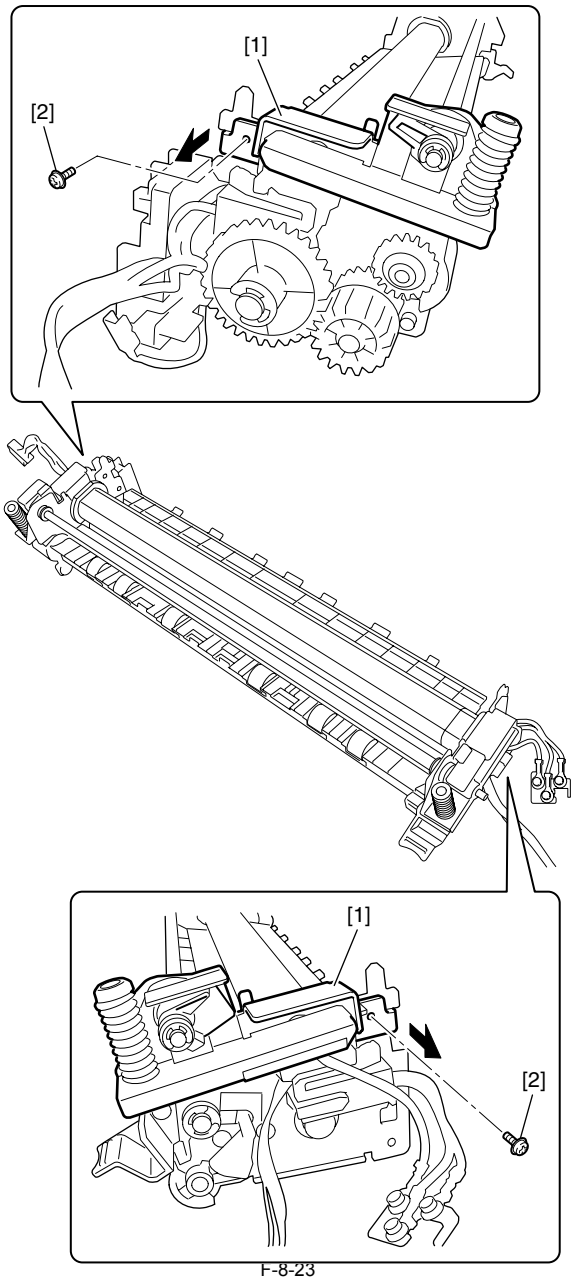
F-8-21

8) Remove the roller guide unit [1].
- Screw [2], 2 pcs.



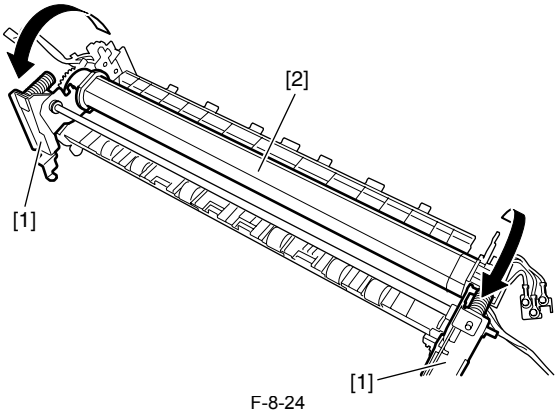
F-8-22

9) Release the pressure plates [1].
- Screw [2], 2 pcs.



F-8-23

10) After rotating the pressure plates [1] to release them from the fixing film unit, remove the fixing film unit [2].



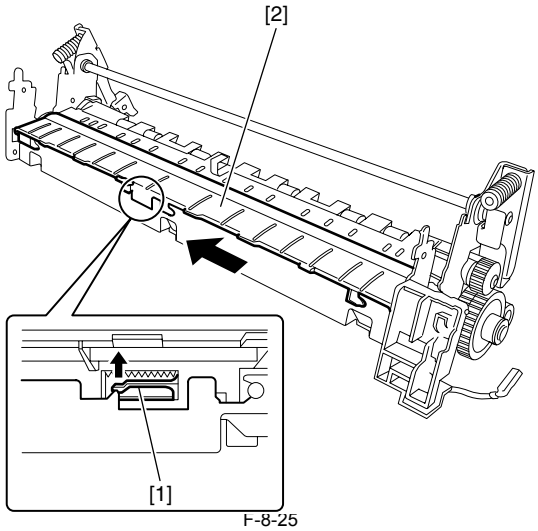
F-8-24

8.4.3 Fixing Pressure Roller

8.4.3.1 Removing the Pressure Roller

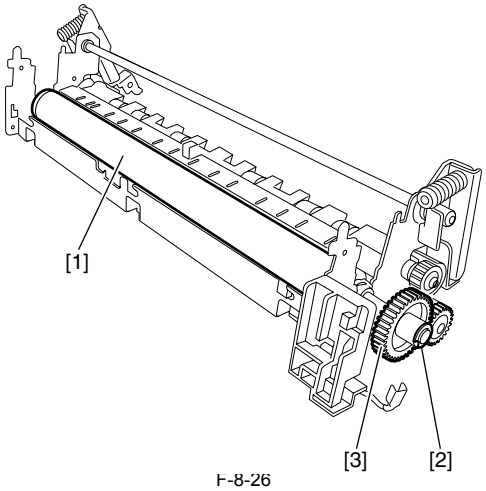
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Remove the fixing unit.
2) Remove the fixing film unit.
3) Raise the claw [1] of the fixing unit inlet guide, and remove the slide the fixing unit inlet guide [2] by sliding it in the direction of the arrow.



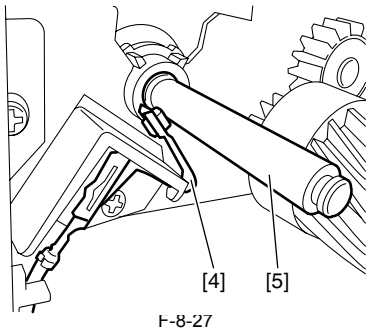
F-8-25

4) Remove the pressure roller [3].
- E-ring [1]
- Gear [2]



F-8-26

⚠
When installing the pressure roller, bring the ground plate [4] into contact with the roller shaft [5].



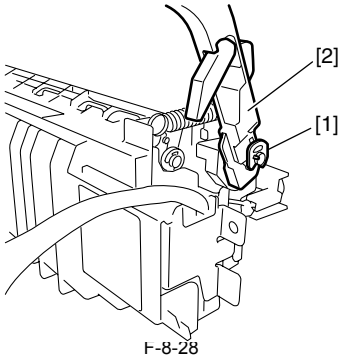
F-8-27

8.4.4 Fixing Delivery Paper Sensor

8.4.4.1 Removing the Fixing Delivery Sensor

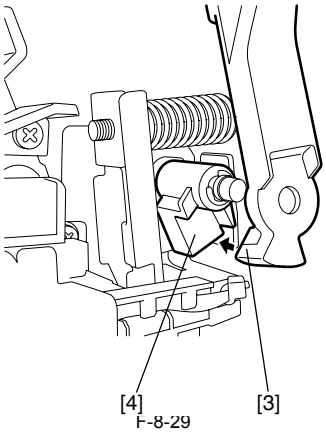
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Remove the fixing unit.
2) Remove the fixing pressure release lever [2].
   - Resin ring [1]



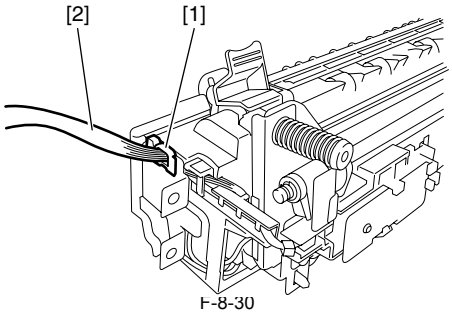
F-8-28

When installing the fixing pressure release lever, check that the rib [3] of the lever is inside the pressure block [4].



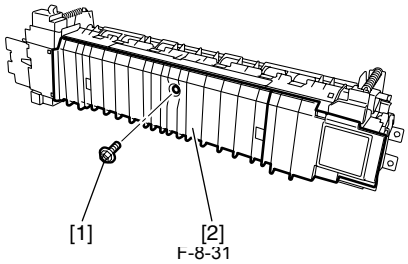
F-8-29

3) Remove the fixing unit harness [2] from the wire saddle [1].



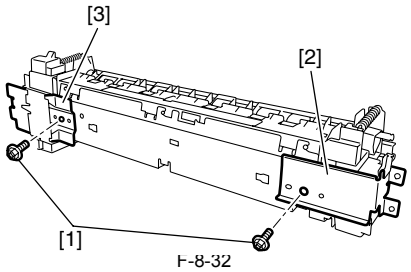
F-8-30

4) Remove the fixing paper guide [2].
   - Screw [1], 1 pc.



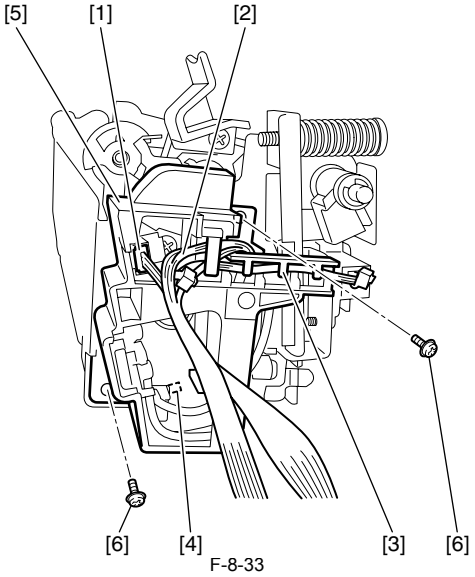
F-8-31

5) Remove the right side stay [1] and left side stay [2].
   - Screw [1], 2 pcs.



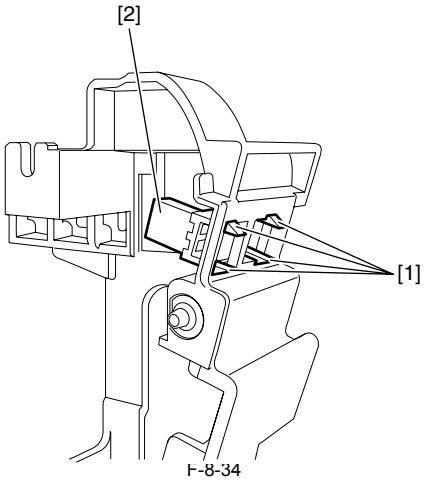
F-8-32

6) Disconnect the connector [1] and release the fixing DC harness [2] from the harness guide [3]. Unhook the claw [4] and remove the sensor holder [5].
   - Screw [6], 2 pcs.



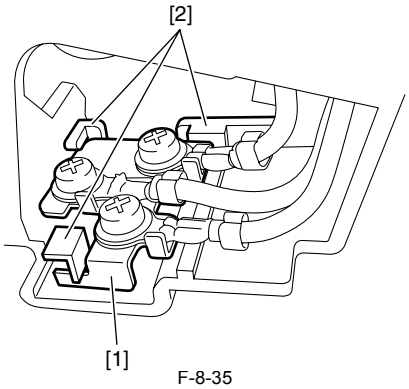
F-8-33

7) Release the four sensor claws [1], and then remove the fixing delivery sensor [2].



F-8-34

When installing the electrode plate [1], place it under the three claws [2] as shown below.



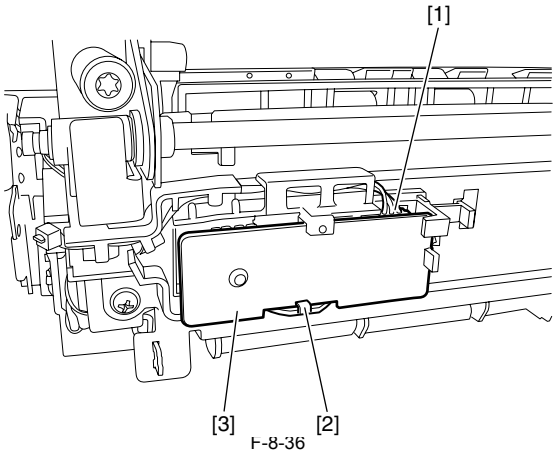
F-8-35

8.4.5 Fixing Film Sensor

8.4.5.1 Removing the Fixing Film Sensor

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Remove the fixing unit.
2) Disconnect the connector [1], release the two hooks [2], and then remove the film sensor [3].



F-8-36

Chapter 9 External and Controls

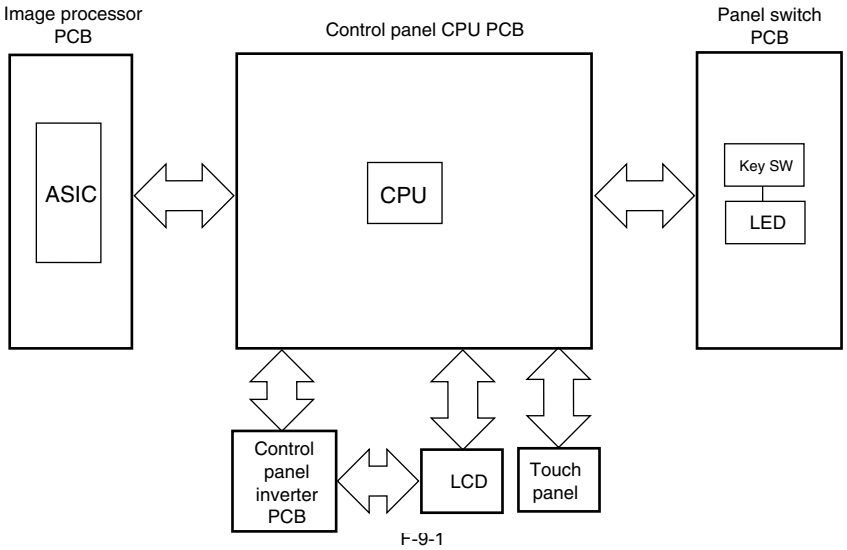
Contents

9.1 Control Panel

9.1.1 Overview

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine's control panel consists of the following PCBs, and is controlled by the ASIC of the image processor PCB.



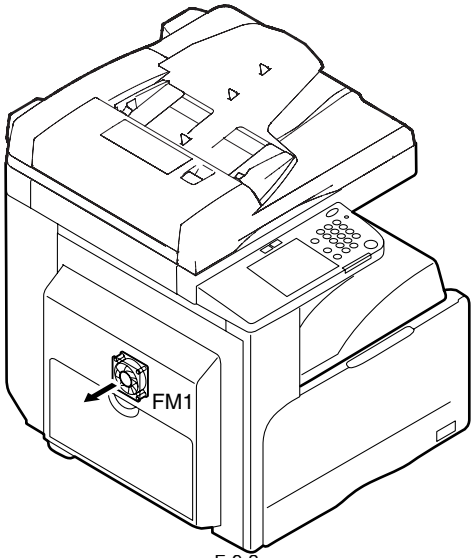
F-9-1

9.2 Fan

9.2.1 Overview

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This machine is provided with a fan to cool the fixing unit.

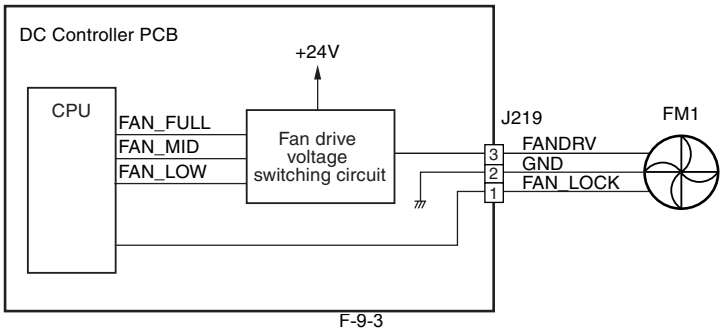


F-9-2

9.2.2 Fan Control

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Heat discharge fan (FM1) rotates at the full speed or the half speed according to the combination of the three control signals (FAN_FULL, FAN_MID, FAN_LOW).

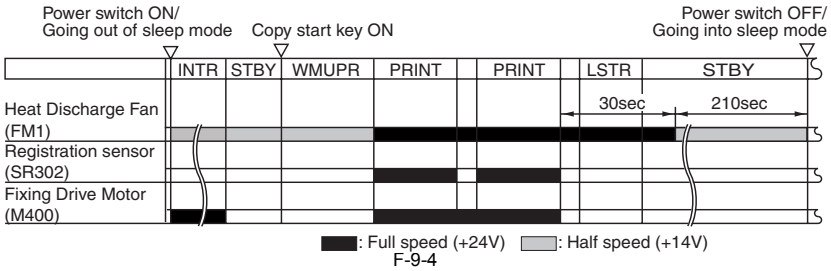


F-9-3

T-9-1

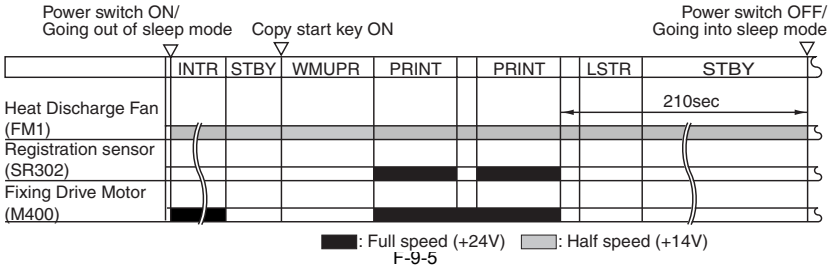
FM1 rotation control	FAN_FULL	FAN_MID	FAN_LOW
Full-speed rotation	1	1	1
Half-speed rotation	0	1	1

1) Rotation control at full speed and half speed
Under the condition to satisfy the following all of three items, the fan turns at the full speed when the fixing drive motor turns on and for 30 seconds after the motor stops. Afterwards, the fan turns at the half speed for 210 seconds, and then the fan stops.
- Environment sensor detects the 27 degree or more.
- The machine equips with the cassette heater.
- Automatic duplex printing mode is executed.



F-9-4

2) Rotation control at half speed only
Under the condition except for the above three items, the fan turns at the half speed when the fixing drive motor turns on and for 210 seconds after the motor stops, and then the fan stops.



F-9-5

E805-0000 (Main body fan error)
When the cooling fan of the main body starts, the fan lock detection signal (FAN_LOCK) has been held at the "H" level for longer than the prescribed time.

9.3 Power Supply

9.3.1 Power Supply

9.3.1.1 Outline

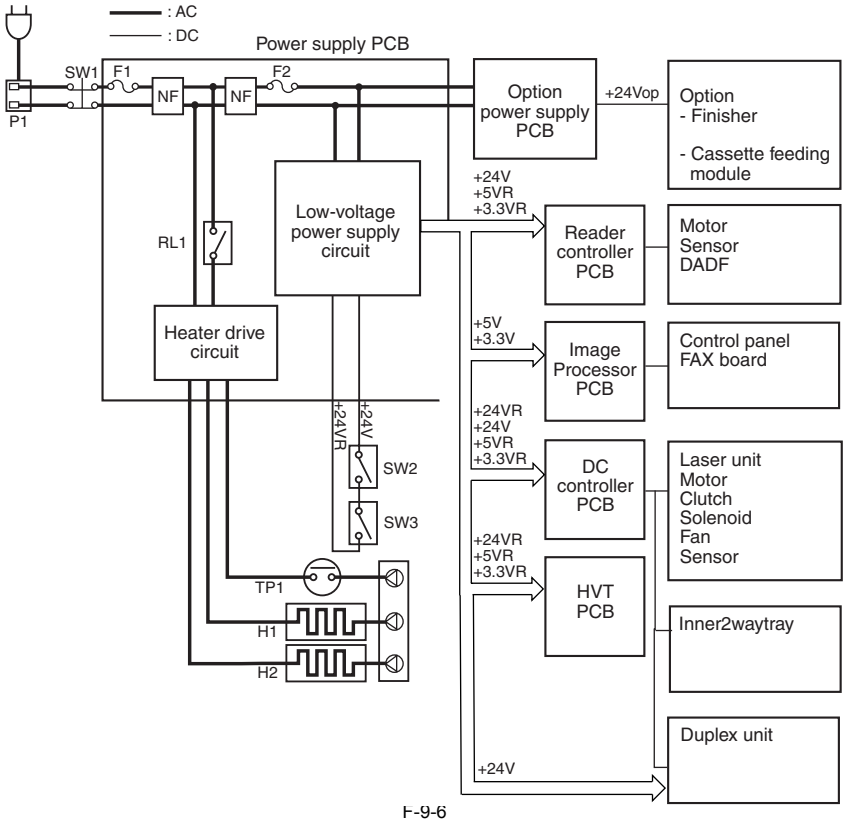
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

When the main power switch (SW1) is turned on, AC power is supplied to the low-voltage power supply circuit in the power supply PCB.
The low-voltage power supply circuit supplies +3.3 V, +5 V, and +24 V to operate the machine.
+24 V is supplied to the motors, fan, electromagnetic clutch, solenoid, etc. +5 V and +3.3 V are supplied to the sensor, etc.
There are two types of +24 V voltages: +24 V which is normaly supplied from the low voltage power supply and +24 VR which is cut off when the front cover or the left door is opened. The +24 VR also plays the role of a door open detection signal (DOPEN). This signal allows the CPU to detect that the front cover or the

left door has opened.

T-9-2

Part Name	Function
Power supply PCB	Generates DC power from AC power.
Option power supply PCB (option)	Generates DC power from AC power for the options.
Main power switch (SW1)	Supplies AC power to the power supply PCB.
Front cover switch (SW2)	Detects opening/closing of the front cover and cuts off +24 VR.
Left door switch (SW3)	Detects opening/closing of the left door and cuts off +24 VR.



F-9-6

9.3.1.2 Rated Output of the Power Supply PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Output	24V	5V	5VR	3.3V	3.3VR
Rated output voltage	24V	5.1V	5.1V	3.4V	3.4V
Output voltage tolerance	+10%, -5%	+3%, -4%	+3%, -4%	+3%, -3%	+3%, -3%
Rated output current	3.5A	1.0A	1.0A	2.0A	0.75A
Overcurrent protection trigger current	9.0A	4.0A	4.0A	4.0A	4.0A
Overvoltage protection trigger voltage	32.5V	8.0V	8.0V	5.5V	5.5V

9.3.2 Protection Function

9.3.2.1 Protective Mechanisms

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The power supply PCB is provided with an overcurrnet/overvoltage protection function to automatically cut off the output voltage when a trouble such as a short circuit occurs on in the load.
When the overcurrnet/overvoltage protection function is activated, turn off the main power switch, solve the trouble with the load, and then turn on the main power switch.
Further, the power supply circuit has two fuses which blow to stop power supply when an excessive current flows in the AC line.

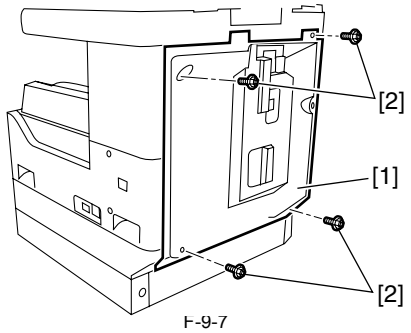
9.4 Parts Replacement Procedure

9.4.1 Rear Cover

9.4.1.1 Removing the Rear Cover

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover [1].
   - 4 screws [2]



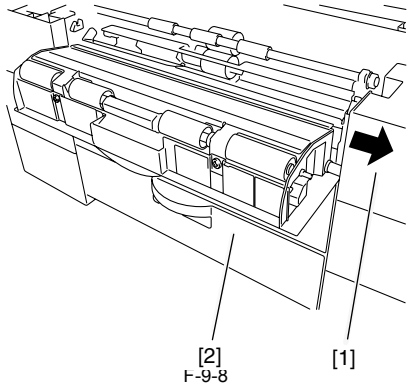
F-9-7

9.4.2 External Cover

9.4.2.1 Removing the Lower-left Cover

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the lower-left cover [2] by opening the rear support [1] with a slightly strong force applied in the direction of the arrow.



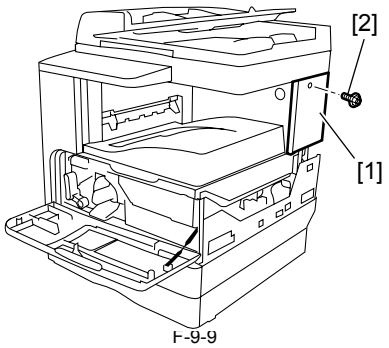
F-9-8

9.4.3 Upper Right Cover

9.4.3.1 Removing the Right Cover (Upper)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Open the front cover.
3) Detach the right cover (lower).
4)Detach the right cover (upper).
   - Screw [2], 1 pc.



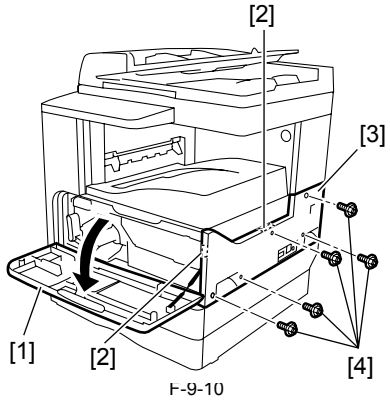
F-9-9

9.4.4 Lower Right Cover

9.4.4.1 Removing the Right Cover (Lower)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Open the front cover.
3) Remove the two hooks [2], and then detach the right cover (lower) [3].
   - Screw [4], 5 pcs.



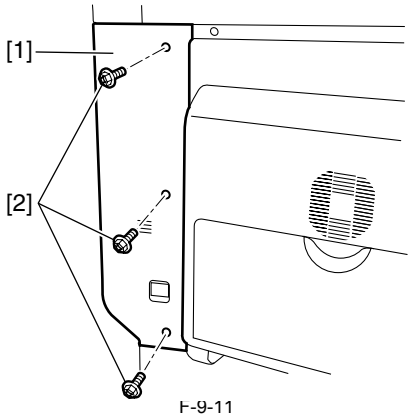
F-9-10

9.4.5 Left Rear Cover

9.4.5.1 Removing the Rear Left Cover

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear left cover [1].
   - 3 screws [2]



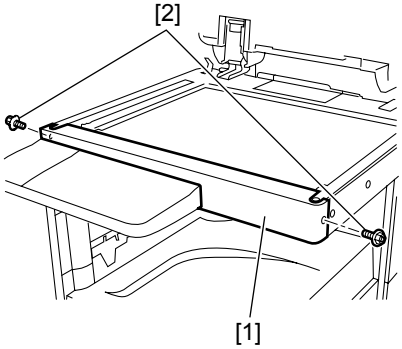
F-9-11

9.4.6 Reader Front Cover

9.4.6.1 Removing the Reader Front Cover

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the copyboard cover (or ADF).
2) Detach the reader front cover [1].
   - Screw [2], 2 pcs.



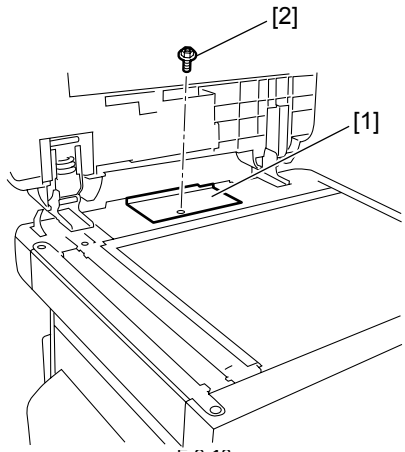
F-9-12

9.4.7 Reader Rear Cover

9.4.7.1 Removing the Reader Rear Cover

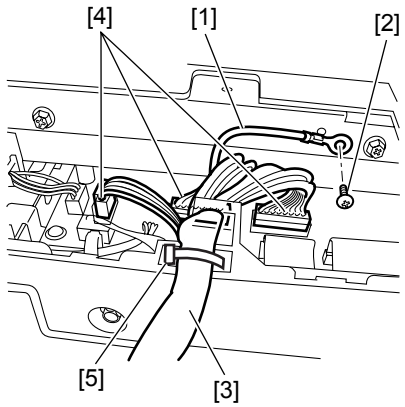
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Open the front cover.
3) Detach the right cover (lower).
4) Detach the right cover (upper).
5) Detach the left cover (rear).
6) Open the copyboard cover (or ADF).
7) Detach the small cover [1].
   - Screw [2], 1 pc.

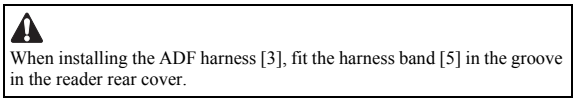


F-9-13

8) Disconnect the ground cable [1] of the ADF harness.
   - Screw [2], 1 pc.
9) Remove the ADF harness [3].
   - Connector [4], 4 pcs.

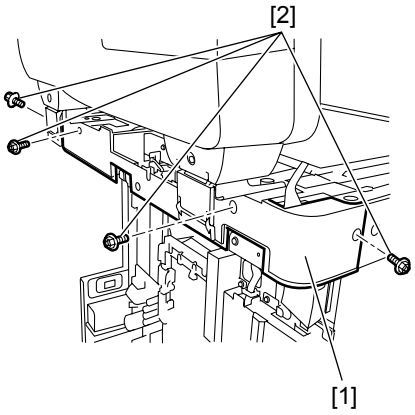


F-9-14



When installing the ADF harness [3], fit the harness band [5] in the groove in the reader rear cover.

10) Detach the reader rear cover [1].
   - Screw [2], 4 pcs.



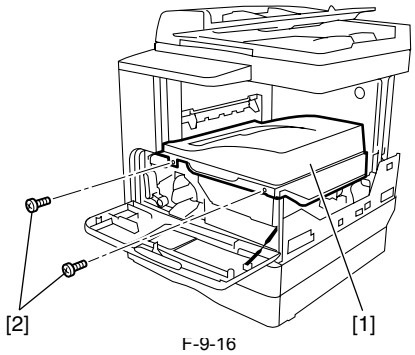
F-9-15

9.4.8 Delivery Tray

9.4.8.1 Removing the Delivery Tray

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Open the front cover.
3) Detach the right cover (lower).
4) Detach the delivery tray [1].
   - Screw [2], 2 pcs.



F-9-16

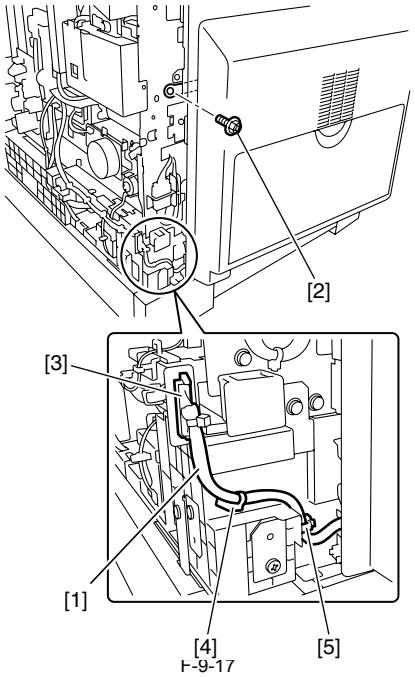
9.4.9 Left Door

9.4.9.1 Removing the Left Door (Non Duplex Unit Type)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Draw out the drum unit.
2) Detach the rear cover.
3) Detach the left cover (rear).

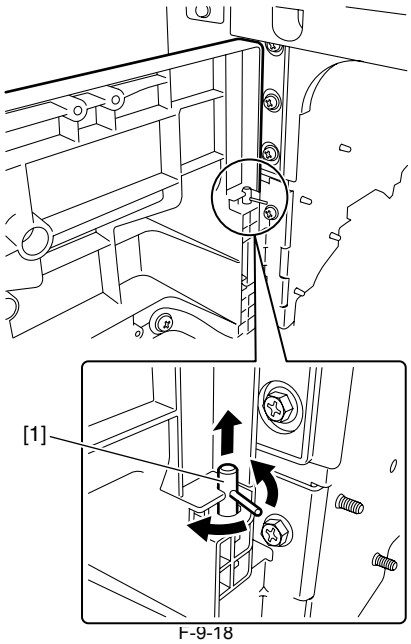
4) Release the duplex unit harness [1].
- Screw [2], 1 pc.
- Connector [3], 1 pc.
- Reusable band [4], 1 pc.
- Wire saddle [5], 1 pc.



F-9-17

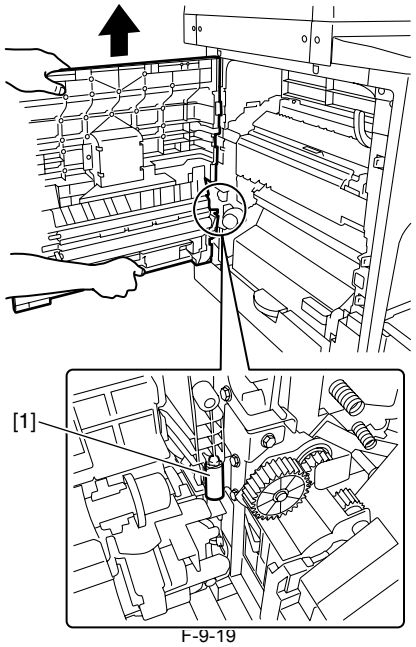
2) Open the left door until it sops and pull out the hinge shaft [1].

MEMO:
When a duplex unit (option) is installed, remove it before pulling out the hinge shaft for each access.



F-9-18

3) Lift the left door with both hands to release it from the door rotation shaft [1], and then remove the left door.

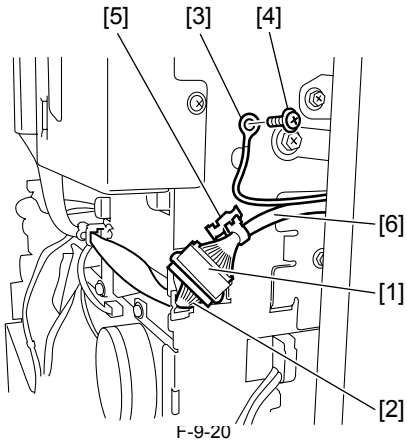


F-9-19

9.4.9.2 Removing the Left Door (With Duplex Unit Type)

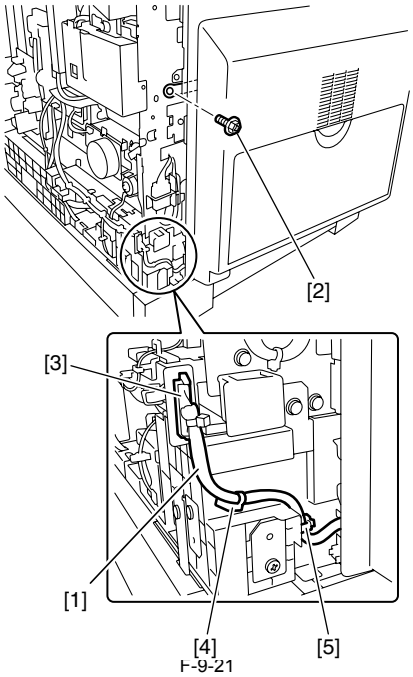
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Draw out the drum unit.
2) Detach the rear cover.
3) Detach the left cover (rear).
4) Disconnect the relay harness [2] from the connector [1]of the duplex unit harness.
5) Disconnect the ground cable [3].
- Screw [4], 1 pc.
6) Remove the reusable band [5] from the duplex unit harness at the rear-left of the main body, and then return the duplex unit harness [6] to the left door side.



F-9-20

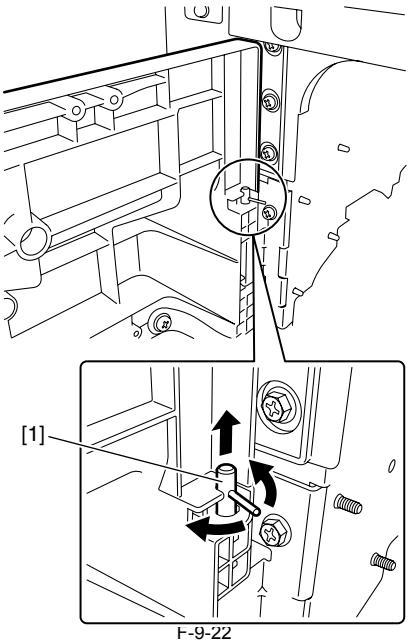
4) Release the duplex unit harness [1].
- Screw [2], 1 pc.
- Connector [3], 1 pc.
- Reusable band [4], 1 pc.
- Wire saddle [5], 1 pc.



F-9-21

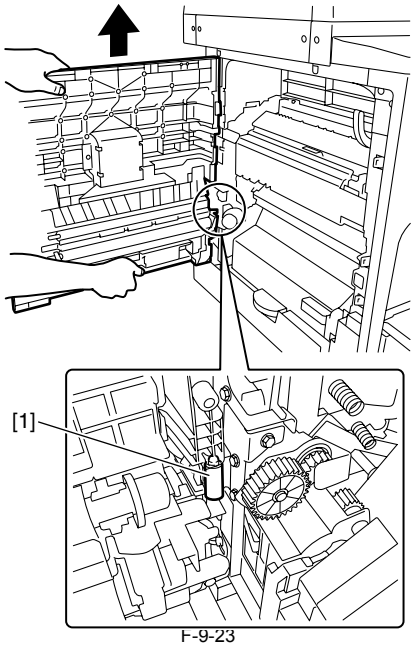
2) Open the left door until it sops and pull out the hinge shaft [1].

MEMO:
When a duplex unit is installed, remove it before pulling out the hinge shaft for each access.



F-9-22

3) Lift the left door with both hands to release it from the door rotation shaft [1], and then remove the left door.



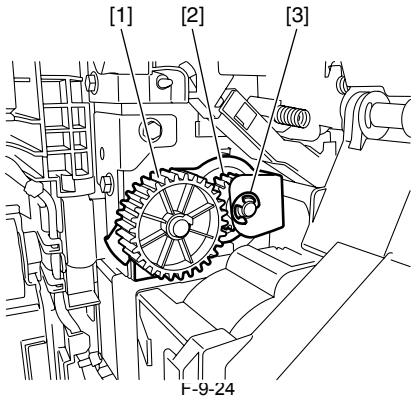
F-9-23

9.4.10 Main Drive Unit

9.4.10.1 Removing the Main Drive Unit

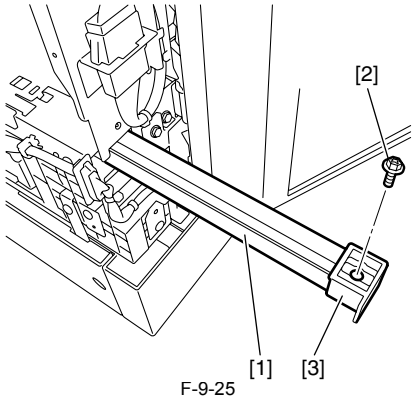
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the front cover.
2) Turn the developing assembly locking lever clockwise to open the left door.
3) Draw out the drum unit.
4) Detach the rear cover.
5) Detach the left cover (rear).
6) Remove the main motor.
7) Remove the registration clutch.
8) Open the left door fully.
9) Remove the gear unit [1] and gear [2].
- E-ring [3], 1 pc.



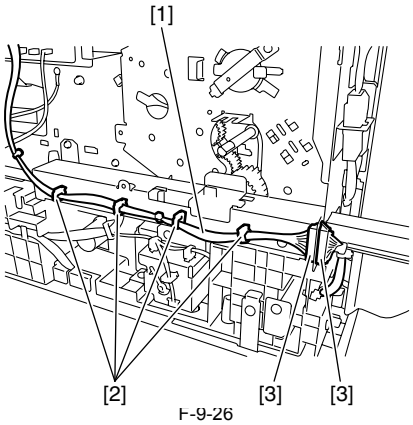
F-9-24

10) Pull out the handle [1] at the back of the machine, remove the screw [2], and then remove the stopper [3].



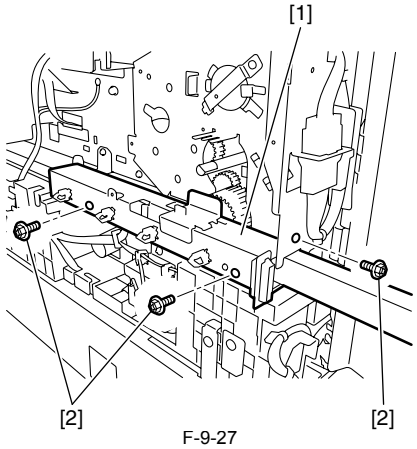
F-9-25

11) Remove the harness [1] from the wire saddle [2].
- Connectors [3], 2 pcs.



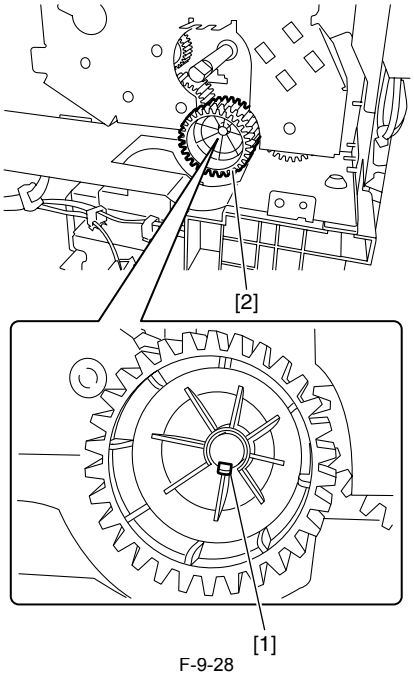
F-9-26

12) Remove the handle unit [1].
- Screw [2], 3 pcs.



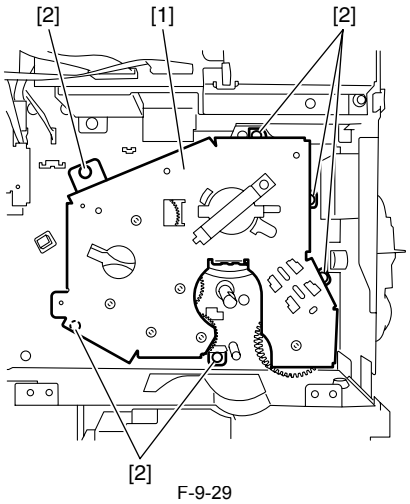
F-9-27

13) Release the gear stopper [1] from the shaft, and then remove the gear [2].



F-9-28

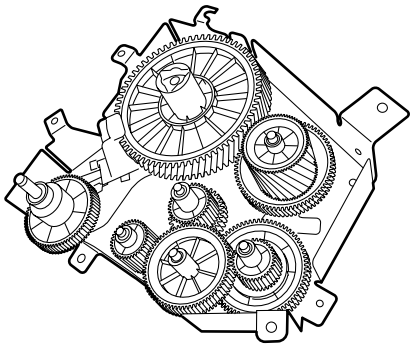
14) Remove the main drive unit [1].
- Screw [2], 6 pcs.



F-9-29

⚠

Since the gears in the main drive unit are not secured, gears will fall if the main drive unit is inclined. If gears should fall, install them at the positions shown below.

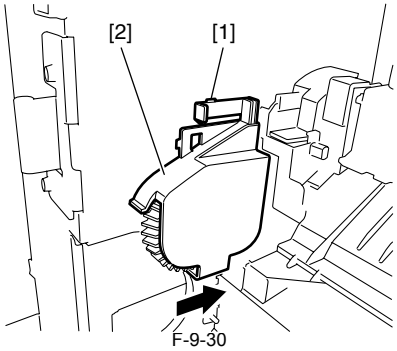


9.4.11 Fixing/Duplex Drive Unit

9.4.11.1 Removing the Fixing Drive Unit

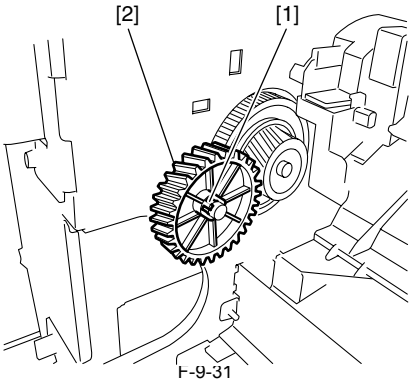
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Draw out the drum unit.
2) Detach the rear cover.
3) Detach the left cover (rear).
4) Remove the left door.
5) Remove the fixing unit.
6) Detach the RAM cover.
7) Remove the SDRAM.
8) Detach the LAN cover.
9) Detach the IP cover.
10) Remove the image processor PCB with the PCB mount.
11) Release the claw [1] on the gear cover, and then remove the gear cover [2] by sliding it in the direction of the arrow.



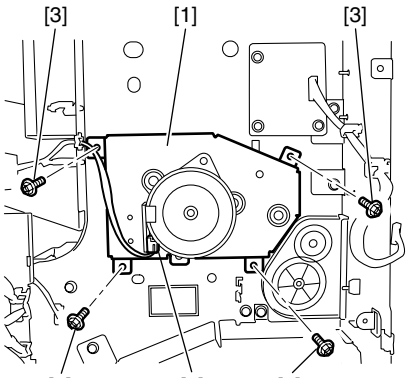
F-9-30

12) Release the gear stopper [1], and then remove the gear [2].



F-9-31

13) Remove the fixing drive unit [1].
- Connector [2], 1 pc.
- Screw [3], 4 pcs.



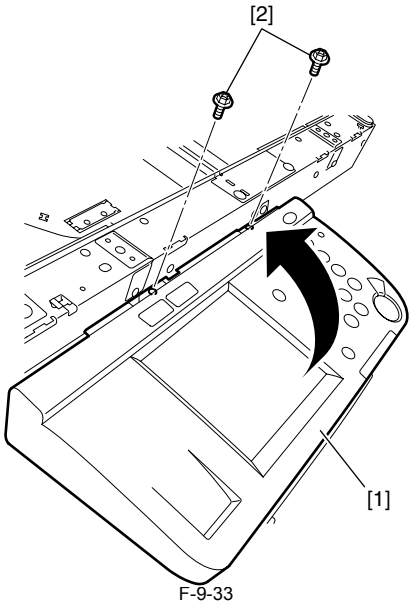
F-9-32

9.4.12 Operation Panel Unit

9.4.12.1 Removing the Operation Panel Unit (Touch Panel Type)

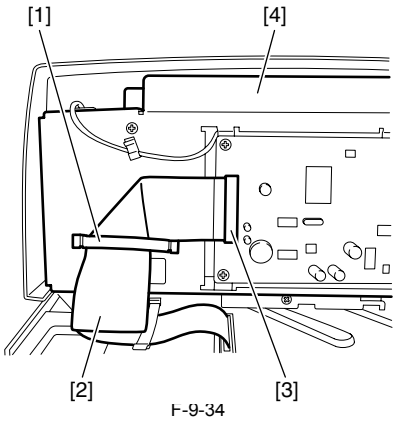
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the reader front cover.
2) Turn over the operation panel unit[1].
- Screw [1], 2 pcs.



F-9-33

3) Disconnect the flexible cable holder [1] and disconnect the connector [3] of the flexible cable [2] to remove the operation panel unit [4].



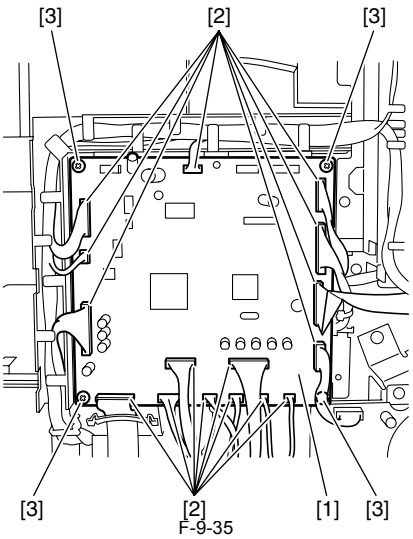
F-9-34

9.4.13 DC Controller PCB

9.4.13.1 Removing the DC Controller PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Remove the DC controller PCB [1].
   - Connector [2], 16 pcs.
   - Screw [3], 4 pcs.



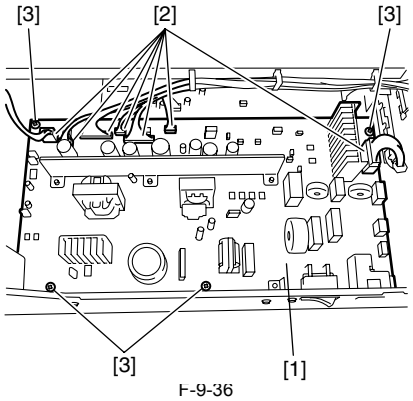
F-9-35

9.4.14 Powwer Supply PCB

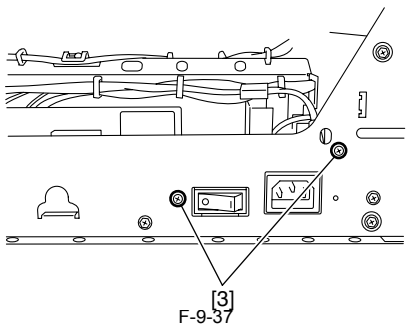
9.4.14.1 Removing the Main Power Supply PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Detach the right cover (lower).
3) Detach the delivery tray.
4) Remove the power supply PCB [1].
   - Connector [2], 7 pcs.
   - Screw [3], 6 pcs.



F-9-36



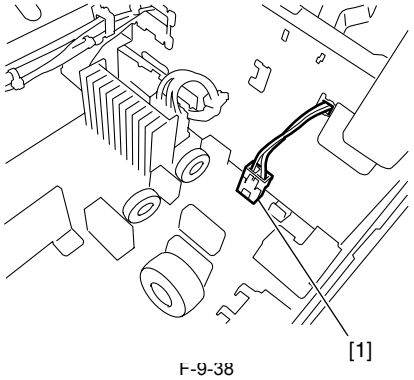
F-9-37

9.4.15 Option Power Supply PCB

9.4.15.1 Removing the Option Power Supply PCB

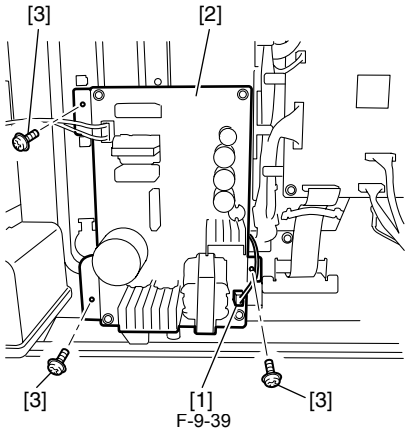
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Detach the right cover (lower).
3) Detach the delivery tray.
4) Disconnect the connector (J16) [1] on the power supply PCB.



F-9-38

5) Disconnect the connector (J53) [1] on the power supply PCB.
6) Remove the option power supply PCB [2].
   - Screw [3], 3 pcs.



F-9-39

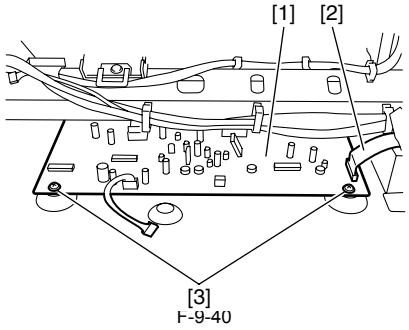
9.4.16 HVT PCB

9.4.16.1 Removing the HVT PCB

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

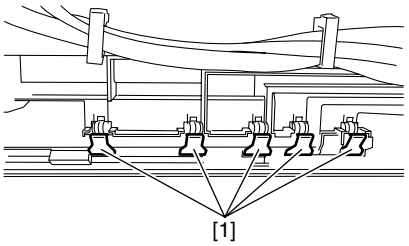
1) Detach the rear cover.
2) Detach the right cover (lower).
3) Detach the delivery tray.
4) Remove the power supply PCB.

5) Remove the HVT PCB.
- Connector [2], 1 pc.
- Screw [3], 2 pcs.



F-9-40

When installing the HVT PCB, check that the contacts on the high voltage electrode plate [1] touch the contacts on the PCB.

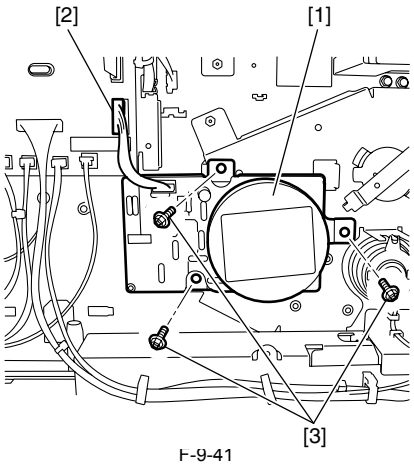


9.4.17 Main Drive Motor

9.4.17.1 Removing the Main Motor

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Remove the main motor [1].
- Connector [2], 1 pc.
- Screw [3], 3 pcs.



F-9-41

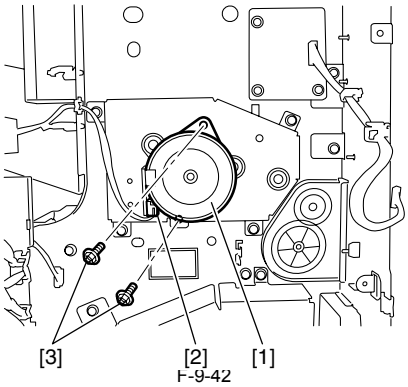
9.4.18 Fixing Drive Motor

9.4.18.1 Removing the Fixing Unit Drive Motor

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Detach the rear cover.
2) Detach the left cover (rear).
3) Detach the RAM cover.
4) Remove the SDRAM.
5) Detach the LAN cover.
6) Detach the IP cover.
7) Remove the image processor PCB with the PCB mount.

8) Remove the fixing motor [1].
- Connector [2], 1 pc.
- Screw [3], 2 pcs.



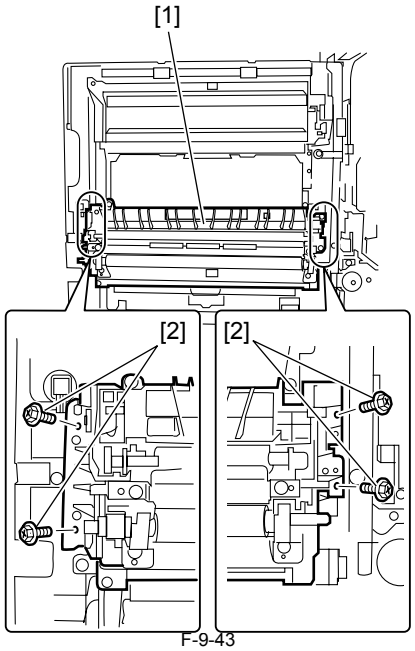
F-9-42

9.4.19 Fixing Heat Discharge Fan

9.4.19.1 Removing the Fixing Heat Discharge Fan (Non Duplex Unit Type)

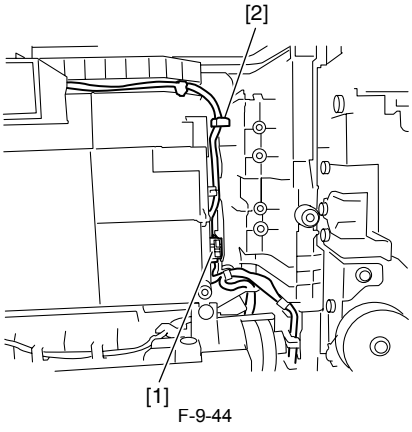
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Open the left door until it stops.
2) Remove the transfer/registration unit [1].
- Screw [2], 4 pcs.



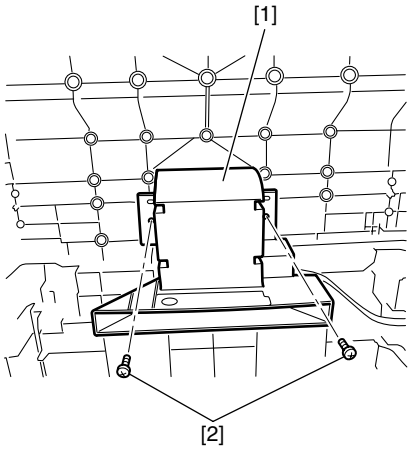
F-9-43

3) Disconnect the connector [1], and then release the harness from the wire saddle [2].



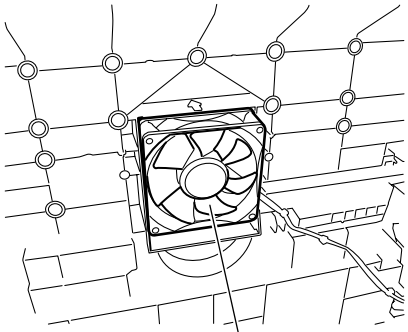
F-9-44

4) Remove the duct [1].
- Screw [2], 2 pcs.



F-9-45

5) Remove the fixing heart discharge fan [1].

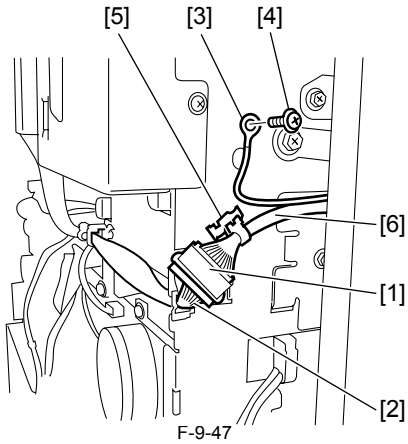


F-9-46

9.4.19.2 Removing the Fixing Heat Discharge Fan (With Duplex Unit Type)

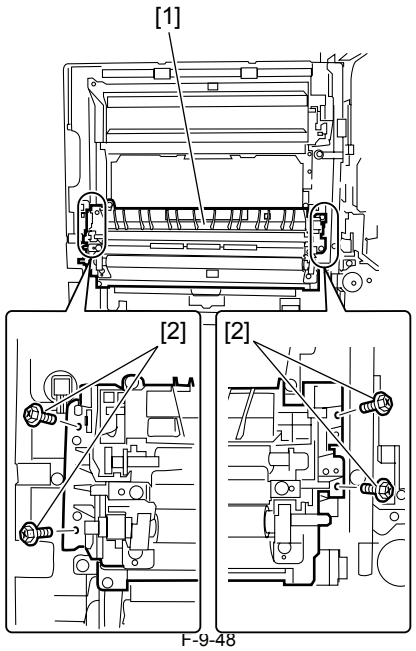
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Draw out the drum unit.
2) detach the rear cover.
3) Detach the left cover (rear).
4) Disconnect the relay harness [2] from the connector [1].
5) Disconnect the ground cable [3].
- Screw [4], 1 pc.
6) Remove the reusable band [5] from the duplex unit harness at the rear-left of the main body, and then return the duplex unit harness [6] to the left door side.



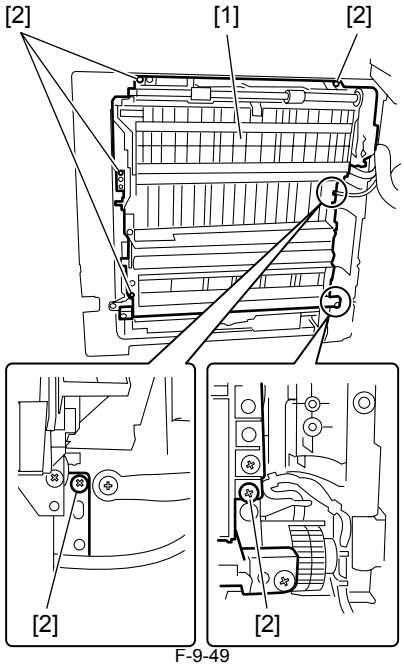
F-9-47

7) Remove the transfer/registration unit [1].
- Screw [2], 4 pcs.



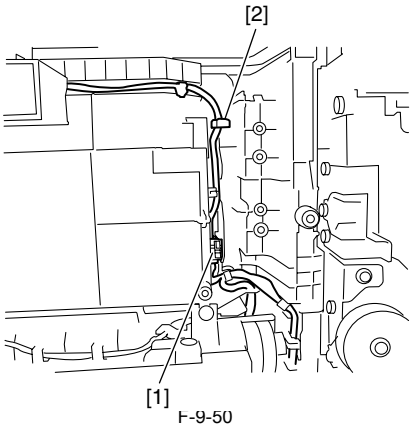
F-9-48

8) Remove the duplex unit [1] from the left door.
- Screw [2], 6 pcs.



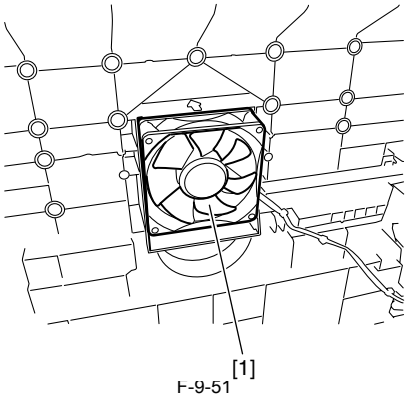
F-9-49

9) Disconnect the connector [1], and then release the harness from the wire saddle [2].



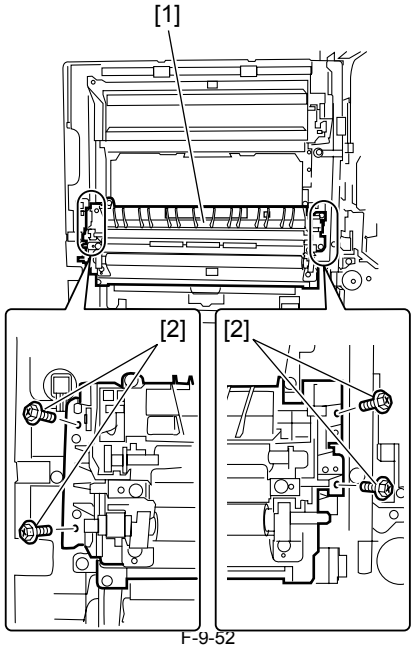
F-9-50

10) Remove the fixing heart discharge fan [1].



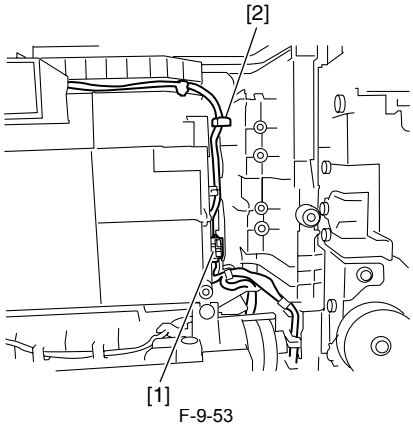
F-9-51

1) Open the left door until it stops.
2) Remove the transfer/registration unit [1].
- Screw [2], 4 pcs.



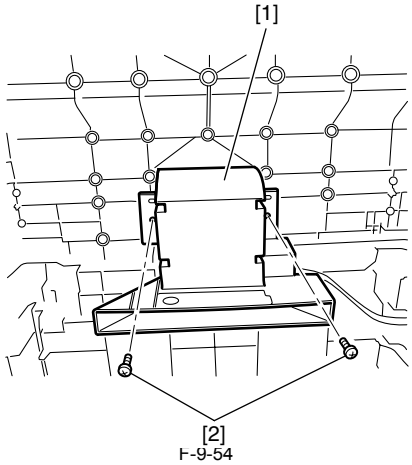
F-9-52

3) Disconnect the connector [1], and then release the harness from the wire saddle [2].



F-9-53

4) Remove the duct [1].
- Screw [2], 2 pcs.



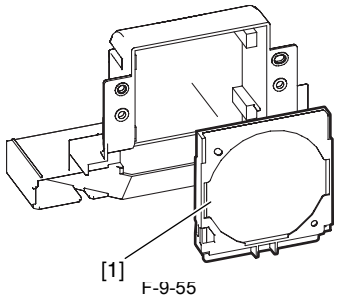
F-9-54

9.4.20 Fan Filter

9.4.20.1 Removing the Fan Filter (Non Duplex Unit)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

5) Remove the fan filter [1] from the duct.



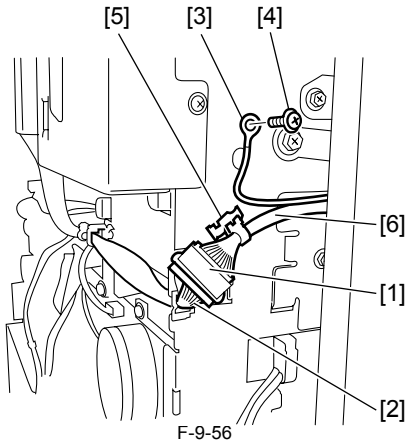
F-9-55

MEMO:
When a duplex unit is used, first remove the duplex unit and next remove the fan filter from it.

9.4.20.2 Removing the Fan Filter (With Duplex Unit Type)

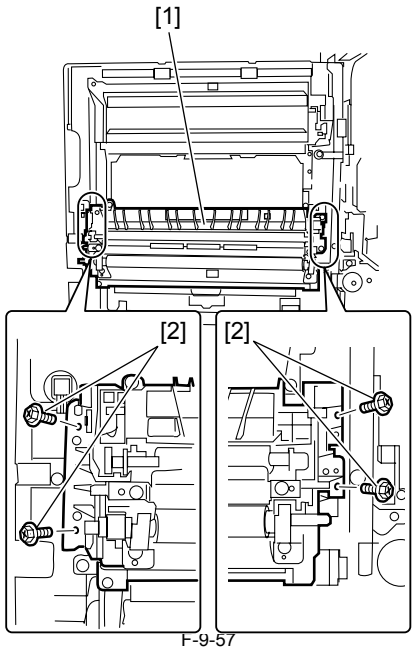
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Draw out the drum unit.
2) Detach the rear cover.
3) Detach the left cover (rear).
4) Disconnect the relay harness [2] from the connector [1].
5) Disconnect the ground cable [3].
   - Screw [4], 1 pc.
6) Remove the reusable band [5] from the duplex unit harness at the rear-left of the main body, and then return the duplex unit harness [6] to the left door side.



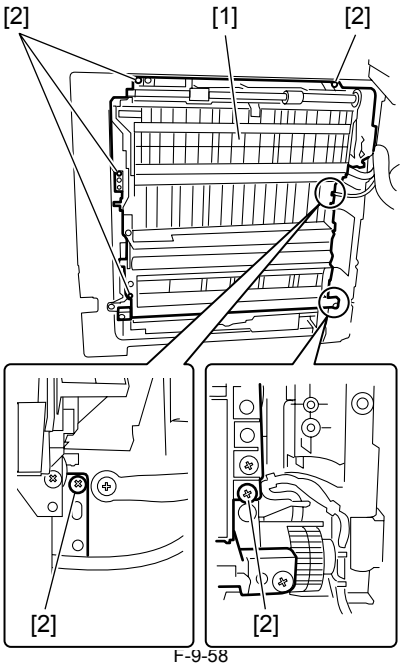
F-9-56

7) Rremove the transfer/registration unit [1].
   - Screw [2], 4 pcs.



F-9-57

8) Remove the duplex unit [1] from the left door.
- Screw [2], 6 pcs.



F-9-58

9) Remove the fan filter from the duplex unit.

Chapter 10 RDS

Contents

10.1 RDS

10.1.1 Overview

imageCLASS MF7470 / imageCLASS MF7480

Product Overview
Embedded RDS (henceforth: e-RDS) is the front-end module of e-Maintenance embedded with a network module of a device controller.

Product Package Configuration
Embedded with a network module of a device.

Features
e-RDS is embedded with a network module of a device controller, which works as a front-end module of e-Maintenance without any hardware other than device. With use of e-RDS, device information such as counter information, failure information, consumables information of device controllers are transmitted to a back-end server called Universal Gateway (centralized device information management host computer, henceforth: UGW) using SOAP protocol. (https(SSL) communication)

10.1.2 Application Operation Mode

imageCLASS MF7470 / imageCLASS MF7480

Whether to enable (ON) /disable (OFF) the Operation Mode is selectable by setting from e-RDS setting display from the service mode (E-RDS SWITCH).
- OFF (default) : e-RDS is disabled.
- ON : All e-RDS operations are enabled.
  By setting from UGW, operations including counter transmission, log transmission, and alert transmission can be controlled.

Note that the communication test (COM-TEST) is required prior to start of e-RDS operation.
(For detail, see 'Settings of e-RDS'.)

10.1.3 Communication Test

imageCLASS MF7470 / imageCLASS MF7480

By implementing a communication test (COM-TEST) from the service mode, service technicians can test the connection of the device with UGW.
In case of a communication error, you can find its cause by referring to the communication error log.

e-RDS obtains the schedule information from UGW by performing COM-TEST.
The obtainment of the schedule information from UGW enables e-RDS to start its operation.

10.1.4 Communication Log

imageCLASS MF7470 / imageCLASS MF7480

In case of a communication error (such as proxy server error), error log is recorded (for 5 cases).
Error code and error information can be displayed on the control panel as a list (service mode: COM-LOG), and printed out as a report.
(service mode: #REPORT > #REPORT OUTPUT > ERDS COM LOG LIST)

10.1.5 Detail of Communication Log

imageCLASS MF7470 / imageCLASS MF7480

Error code and detail of the communication error log can be displayed on the control panel and printed out as a report.

10.1.6 Initialization of e-RDS

imageCLASS MF7470 / imageCLASS MF7480

e-RDS setting can be returned to the factory default.

Step
Initialize the e-RDS setting values using the service mode items below:
#CLEAR > ERDS-DAT

Initialized setting values and data
Followings are the setting values and internally used data that are initialized:
#E-RDS > E-RDS SWITCH
#E-RDS > RGW-PORT
#E-RDS > RGW-ADDRESS
#E-RDS > COM-LOG

Initialization of e-RDS resets all the port and address settings so that they are suitable for UGW, but does not reset the CA certificate data.
For this reason, in case a non-default CA certificate data is installed, you need to delete the certificate (installation of the default certificate) after initialization of e-RDS.
(As for deletion of certificate, see 'CA certificate'.)

10.1.7 SOAP Communication Function

imageCLASS MF7470 / imageCLASS MF7480

Following processings are enabled by use of SOAP communication (SSL client communication).
Server authentication is performed by use of CA*1 certificate issued by VeriSign.
In case the server certificate or CA certificate is expired, the device is not connected to UGW.

*1: CA stands for Certificate Authority, which are the institutions which issue electronic certificate used in e-commerce etc.

(1) Communication Test
- Perform the communication test

(2) Transmit all or a part of the following data based on the schedule information obtained from UGW.
- Counter details data
- Service mode counter
- Parts counter
- Mode counter
- ROM version
- Schedule information
- Application debug log
- Environment log (Device condition log)

(3) In case of detecting jam, or alert/service call error from the device, transmit the following to UGW.
- Transmission of alert code (transmit the counter information simultaneously)

  Transmit an alert code in case of a change in the status of the device.
  Main alert codes are toner LOW/OUT, jam, and door open.
  At error recovery, transmit again the data that indicates the recovery.
- Transmission of jam log (transmit the counter information simultaneously)
- Transmission of service call (Error code) log (transmit the counter information simultaneously)

(4) Change of device schedule information
- Check whether there is a processing to execute.
- Update the schedule information.
- Return the result of the operation.

(5) Filtering reception from UGW
- Alert filtering

T-10-1

Transmission Detail List:

Transmission Detail / Process Detail	Transmission Timing	Remarks
Communication test communicatonTest	Either at the time of execution of the service mode of the device or upon a request from UGW with 'getOperationList'	
Counter details data collection/transmission postGlobalClickCount	Once every 16 hours.	The detailed counter data for each paper size such as Total.
Service mode counter collection/transmission postSeviceModeCounter	Once every 16 hours.	The counter data tied to the service mode number. Mainly used for billing.
Mode counter collection/transmission postModeCounter	Once every 16 hours.	The counter data by operation mode.
Parts counter collection/transmission postPartsCounter	Once every 16 hours.	The counter data indicating the amount of usage by part.
ROM version postFirmwareInfo	Once every 7 days.	
Schedule information transmission postConfiguration	Once every 16 hours.	
Debug log postDebugLog	At the time that the log has been accumulated 5kbyte	The log data output by an application for analyzing a malfunction.
Alert code postAlert	At the time of change in the device condition	The data when a status change occurs.

Transmission Detail / Process Detail	Transmission Timing	Remarks
Jam log postJamLog	At the time of jam occurrence	Includes the jam code, date of occurrence, total counter at occurrence, paper feeding slot, and paper size.
Service call log postServiceCallLog	At the time of service call occurrence	Includes the error code, error subcode, date of occurrence, total counter at occurrence, paper feeding slot, and paper size.
Operation list check getOperationList	Once every 16 hours. Upon a request from UGW	
Schedule information update getConfiguration	At the time of communication test	
Environment log (Device condition log) transmission postEnvironmentLog	Once every 12 hours.	The environment information inside the device such as temperature and humidity.
Alert filtering getAlertCodeNotificationList	Upon a request from UGW	When requested from UGW with 'getOperationList'

- The timing of transmission to UGW varies according to the device.
- The timing of transmission to UGW cannot be set on the side of the device.

10.1.8 Retransmission at the time of SOAP Transmission Error

imageCLASS MF7470 / imageCLASS MF7480

In case the SOAP transmission error occurs due to the fault at UGW side at the time of the alert code transmission, store the last 3 data failed to transmit in the RAMDISK, and retransmit it with the predefined intervals.

In addition, in case the SOAP transmission error occurs at the time of the jam log or service call log transmission, retransmit the data failed to transmit with the predefined intervals. (When transmitting these 2 types of data, RAMDISK is not used, and the number of retransmission is not restricted.)

10.1.9 e-RDS Setting Screen

imageCLASS MF7470 / imageCLASS MF7480

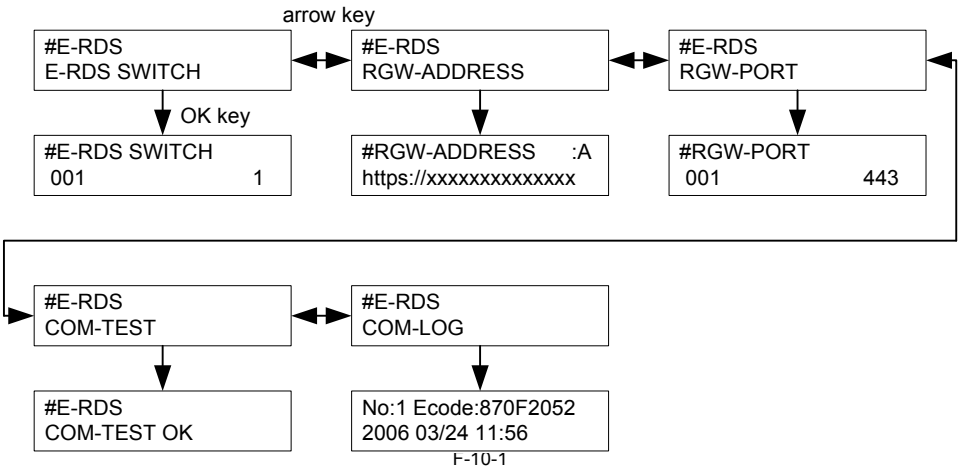
(1). Setting Items
The forms and default values of the setting items related to the e-RDS in the service mode are as follow:

T-10-2

Service Mode Setting Items (Meaning)	Description
E-RDS SWITCH	e-RDS OFF/ON 0: OFF/1: ON When the setting is ON, transmit the counter information and error information to UGW. Default value: 0 (OFF)
RGW-ADDRESS (RDS-Gateway ADDRESS)	URL of UGW Default value: the actual URL of UGW Number of characters: 129 bytes (Including NULL. 1-byte code only)
RGW-PORT (RDS-Gateway PORT)	Port number of UGW Default value: 443 Setting range: 1 to 65535
COM-TEST (Communication Test)	Execution of communication test Judge whether the connection with UGW is established, and display the result with either 'COM-TEST OK' or 'COM-TEST NG'.
COM-LOG (Communication Log)	Detail of the communication test result Display the error log for the communication with UGW. As the error information, occurred time, error code, and error detail information are displayed. Max. number of log: 5 Error information: max. 128 characters (Excluding NULL)

(2). Screen Menu

An example for the transition of the menu related to the e-RDS in the service mode.



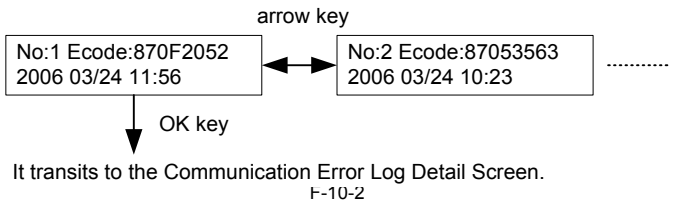
F-10-1

(3). Communication Error Log Selection Screen
The communication error log is displayed by selecting #E-RDS > COM-LOG in the service mode, and pressing the OK key.

The error log to be displayed is as follow:
Communication error log : transmission error of counter and various logs up to the present, as well as the error occurred date, error code, and error information at the communication test.

By pressing the arrow key (◀ key, ▶ key), the communication error log from No.1 to No. 5 can be checked.
(Only the No. in which an error is registered can be selected.)

Example of Operation



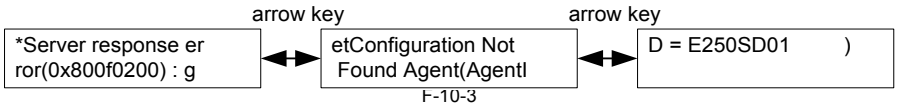
F-10-2

By pressing the OK key, it transits to the Communication Error Log Detail Screen.
Max. number of the communication error log: 5

(4). Communication Error Log Detail Screen
The detail information of the communication error log is displayed.
For the message to be displayed, see the 'Error Message List'.

By pressing the Menu key, it returns to the Communication Error Log Selection Screen.
Detail error information: max. 128 characters (excluding NULL)

For instance, in case of the detail error '*Server response error(0x800f0200): getConfiguration Not Found Agent(AgentID = E250SD01)', it is too long to fit in a screen; thus, display it with multiple screens as shown below. Switch each screen with the arrow key.



F-10-3

10.1.10 Report Output of Communication Error Log

imageCLASS MF7470 / imageCLASS MF7480

The communication error log can be output as report.

Operation:
#REPORT > #REPORT OUTPUT > ERDS COM LOG LIST

10.1.11 Sleep Operation

imageCLASS MF7470 / imageCLASS MF7480

Even in the sleep mode (power saving), the e-RDS executes the transmission if there is a message to be sent.

10.1.12 Alarm Filtering, Alert Filtering

imageCLASS MF7470 / imageCLASS MF7480

With the instruction from UGW (getOperationList), change the alarm level for the specified alarm code, and transmit only the specified alert code.

10.1.13 CA Certificate

imageCLASS MF7470 / imageCLASS MF7480

(1). Overview of functions
CA certificate (CA-KEY) is included in the system software System (Default CA certificate. For UGW).

The CA certificate other than the default is installable with SST.

[Outline of the step]
* See 'Downloading System Software' for details.
1. Move it from SST to CA Certificate Install > Flash File System.
2. Turn the power off/on.
Read the CA Certificate file from Flash file system during initialization, and register CA Certificate through the key management module.
3. Check the information in the service mode #NETWORK > #CERTIFICATE > #CA-CERTIFICATE to see if the same one as the installed CA Certificate has been registered.

(2). The number of CA Certificates stored in the device
The upper limit of CA Certificates stored in the device : 1

(3). Saving the certificate
When executing Service Mode > #CLEAR > CA-KEY and turning off/on the power, the default CA Certificate is loaded on the Flash memory.
If necessary, install CA Certificate with SST.

(4). Update of the certificate
The registered CA Certificate is renewed when overwriting with SST.

(5). Deleting the certificate
The default CA Certificate is automatically installed when deleting CA Certificate in the service mode and turning off/on the power.
Deleting CA Certificate therefore means installation of the default CA Certificate.

10.1.14 Settings of Network Connection (Installation/Maintenance)

imageCLASS MF7470 / imageCLASS MF7480

Before setting e-RDS, the network setting of the device needs to be surely made.
(1). Display Additional Functions screen
- Press [Additional Functions] key.
- Enter System Manager ID and the password if required.
(2). Display TCP/IP Settings screen
- Select [System Settings] > [Network Settings] > [TCP/IP Settings] on the LCD panel.
(3). Setting the items regarding IP address
- Select [IP ADDRESS Settings] to display IP ADDRESS Settings screen.
- Press each item of IP Address, Subnet Mask, Gateway Address, DHCP to make the settings.
- Press [OK] after completing the settings to return to TCP/IP Settings.
(4). DNS SERVER
- Select [DNS SERVER] to display DNS SERVER screen.
- Press the necessary items to make the settings.
- Press [OK] after completing the settings to return to TCP/IP Settings screen.
(5). Proxy Settings
- Select [Proxy Settings] to display Proxy Settings screen.
(Press [down] key until [Proxy Settings] is displayed on TCP/IP Settings screen. Thereafter, press [Proxy Settings].)
- Press the necessary items to make the settings.
- Press [OK] after completing the settings to return to TCP/IP Settings screen.
(6). Return to the Basic Features screen (initial screen)
- Press [Additional Functions] key, or press [Done] button until Additional Functions screen closes.


When changing the above Network Settings, it is necessary to turn off/on the power of the device.

10.1.15 Settings of e-RDS (Installation/Maintenance)

imageCLASS MF7470 / imageCLASS MF7480

(1). Display the menu screen of e-RDS by the service mode of the device.
(1)-1. Enter the service mode:
[Additional Functions] key > 2 key > 8 key > [Additional Functions] key

(1)-2. Initialization
#CLEAR > ERDS-DAT

If necessary, install or delete CA Certificate and turn off/on the power.
(1)-3. Display the menu screen of e-RDS
Press the arrow key to move to the menu (#E-RDS) of e-RDS.
(2). Set E-RDS SWITCH to 1 in order to enable e-RDS.
(3). If necessary, enter URL of UGW in RGW-ADDRESS (The setting has normally been done).
(4). Enter the port number of UGW in RGW-PORT (normally the setting done).
(5). Select COM-TEST and press OK key to execute the test of communication with UGW.
(6). If the result is 'COM-TEST NG', correct the settings of RGW-ADDRESS/RGW-PORT and repeat COM-TEST until it becomes 'COM-TEST OK'. If necessary, check the network settings of the device, the status of network connection and availability of the communication to UGW.

10.1.16 Troubleshooting

imageCLASS MF7470 / imageCLASS MF7480

No.1
Q. Communication test fails.
A. Check the firmware version.
Check the network settings.
Check the results of communication test.

10.1.17 Error Message list

imageCLASS MF7470 / imageCLASS MF7480

The followings are error information displayed on the 'Communication Error Log Detail Screen'.
(The term "server" used in this section refers to UGW.)

- When OK is pressed on the 'Communication Error Log Selection Screen' where a communication error log is displayed, the screen changes to the 'Communication Error Log Detail Screen'.
- When an error character string on the 'Communication Error Log Detail Screen' is so long that the entire message cannot be displayed on a screen at one time, use the arrow keys to switch between screens. The amount of error information displayed on the 'Communication Error Log Detail Screen' is 128 characters at maximum.

Error character strings from No.3 onward listed on the table below will be displayed in the following order.
[*][Error character string] : [Method name] [Server detail error]
Character strings bracketed in [] are replaced by the following.

[*]:
An '*' (asterisk) is added to the beginning of the error character string for errors occurred during communication test.

[Error character string]:
For No.1 and 2 of the [Error character string] below, only the error character strings are displayed. The rest of the error character strings are displayed in the order described above.

T-10-3

	Error Character Strings	Error Description	Cause	Measures
1	SUSPEND: Communication test is not performed	e-RDS is ON but Communication test is not completed.	e-RDS is ON but e-RDS was activated without performing Communication test. (The device is rebooted.)	Perform and complete Communication test (COM-TEST).
2	Event Registration is Failed.	Event registration failure error	A processing (Event Registration) inside the device has been failed.	Turn OFF and then ON the device.Otherwise reinstall the device system software.
3	URL Scheme error(not https)	URL scheme specification error	The URL header of the server registered is not https.	Correct the header of the server URL to https. Service Mode > #E-RDS > RGW-ADDRESS
4	Server connection error	Server connection error	Displayed when a TCP / IP communication error occurs. This error also occurs as a result of the Proxy server dysfunction while the proxy server is in use.	- Check the network connection. - Check the port number for RGW-PORT. - Check the server status. - When the Proxy server is in use, check the Proxy server address. - When the Proxy server is in use, check the status of the Proxy server address.

	Error Character Strings	Error Description	Cause	Measures
5	URL server specified is illegal	Server-specified URL error	A different URL than the one specified by the server has been registered.	Check with the server helpdesk.
6	Proxy connection error	Proxy connection error	Cannot connect to the Proxy server.	Check the server IP address and port number and correct the settings accordingly. The device needs rebooting when network-related settings such as Proxy settings are modified.
7	Proxy authentication error	Proxy authentication error	Authentication for the Proxy server has failed.	Check the user name and password to log in to the Proxy server and re-set them.
8	Proxy address resolution error	Proxy address resolution error	Proxy server address resolution by DNS has failed.	- Check the network configurations of the device. (Check if PING by host name passes from computer to the device.) - Check the DNS settings. - Check if the host name set in RGW-ADDRESS is registered in the DNS server. - Check if the Proxy server address is correct.
9	Server certificate error	Server certificate error	During SSL negotiation, server certificate notified by the server cannot be authenticated by CA certificate of the device.	- Check that CA certificate has been installed. Service Mode > #NETWORK > #CERTIFICATE > #CA-CERTIFICATE - Install CA certificate corresponding the server.
10	Server certificate verify error	Server certificate verify (URL check) error	During SSL negotiation, host name written in server certificate notified by the server and URL host name set in RGW-ADDRESS have been different.	Check host name in the URL set in RGW-ADDRESS. Service More > #E-RDS > RGW-ADDRESS
11	Server certificate expired	Server certificate expired	- CA certificate registered in the device is expired. - Time and date on the device is invalid against the term specified in the certificate.	- Check expire date of CA certificate. Service Mode > #NETWORK > #CERTIFICATE > #CA-CERTIFICATE If the certificate is expired, register a valid CA certificate on the device. - Set the correct time and date on the device.
12	Unknown error	Unknown communication error	Unknown communication error has occurred.	Wait for a while and try again.
13	Server response error (NULL)	Server response error(When server error code processing has failed)	Server response error	This error can happen when Send function and e-RDS function are performed simultaneously. Wait for a while to try again and check that Send OK is displayed next time sending is performed.
14	Server response error ([Hexadecimal number]) [Server detail error]	Server response error	Displayed when server returns some kind of error although communication to the server was successful. [Hexadecimal number] Error code returned from the server. [Server detail error] Detailed character string of the error returned by the server.	Wait for a while and try again. Requires different actions according to the error returned from the server.
15	Device internal error	Device internal error	Internal error such as unable to acquire the memory has occurred.	Turn OFF and then ON the device.Or reinstall the device system software.

	Error Character Strings	Error Description	Cause	Measures
16	Server schedule is invalid	Invalid server-instructed schedule	Schedule setting value instructed by the server during Communication test is invalid.	Report detailed information on error occurred to the support division. After countermeasures are taken on the server side, perform Communication test again.
17	Server response time out	Server response time out	Due to network congestion etc., response from server does not return within a specified period of time.	In case this occurred when implementing the communication test, retry after a certain period of time. This error has been found to occur due to simultaneous operation of Send function and e-RDS function in some cases.
18	Service not found	Service is not found (invalid path)	Cannot access server due to wrong path for server URL.	Check the server URL including path, and set it again. Service mode > #E-RDS > RGW-ADDRESS
19	E-RDS switch is setted OFF	e-RDS is not enabled.	Executed communication test (COM-TEST) while e-RDS operation switch (E-RDS-SWITCH) is turned OFF.	Enable operation switch of e-RDS and execute communication test again. Service mode > #E-RDS > E-RDS SWITCH
20	Server schedule is not exist	Schedule of the target device does not exist within server.	Schedule of target device is not registered in server.	Check with Server Helpdesk
21	Network is not ready, try later	Network is not ready	Tried communication while connection to network is not established (at such timing as immediately after startup of device). (During the 60 seconds after startup of a device, connection to network may not be established.)	Check to see that connection to network is established. Furthermore, retry connection after long-enough period of time.
22	URL error	URL setting error	A host name of URL set as a server is invalid.	Check server URL including path, and set it again. Service mode > #E-RDS > RGW-ADDRESS
23	Server address resolution error	Server address resolution error	- Can access DNS server - Failed in address resolution of host name set as RGW-ADDRESS	- Check network status of device (Check to see that device responds to ping by host name from PC) - Check DNS setting - Check to see that host name set in RGW-ADDRESS is registered in DNS server - Check to see that URL set in RGW-ADDRESS is valid.
24	Server specified list is too big	Alarm/alert filtering information specified by server is too big	Ten or more alarm/alert filtering cases are registered.	Check with Server Helpdesk
25	Server specified list is wrong	Alarm/alert filtering information specified by server is invalid	Data values registered in alarm/alert filtering are invalid	Check with Server Helpdesk

[Method Name]:

T-10-4

	Method Name	Description
1	postServiceModeCount	Obtain software counters for copy/print charge
2	postModeCount	Obtain mode counter
3	postPartsCount	Obtain parts counter
4	postFirmwareInfo	Obtain ROM version
5	getOperationList	Check whether there is an operation execution command for you in UGW
6	postOperationOutcome	Transmit execution result of operation commanded in getOperationList
7	postConfiguration	Periodical environment information
8	postGlobalClickCount	Obtain counter details data
9	postJamLog	Obtain jam notification
10	postServiceCallLog	Obtain service call notification
11	postAlert	Obtain alert notification
12	postDebugLog	Obtain debug log
13	getConfiguration	Obtain schedule information
14	communicationTest	Communication test
15	postEnvironmentLog	Environment log transmission
16	getAlarmLevelConversionList	Alarm filtering
17	getAlertCodeNotificationList	Alert filtering

[Detail of server error]:
Display detailed error information from error in case there is an error response from UGW. However, in case the character number exceeds 128, character strings after 128th are omitted.
In case of the other error, nothing is displayed here.

Below is the example of the actual characters displayed:
Example) Unexpected error: postGlobalClickCount()

Chapter 11 Maintenance and Inspection

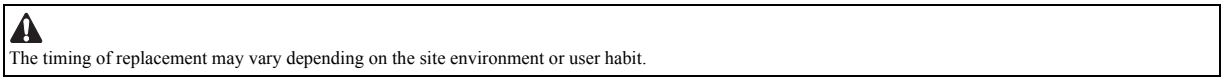
Contents

11.1 Periodically Replaced Parts

11.1.1 Overview

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine has parts that must be replaced on a periodical basis to ensure a specific level of functional performance. (The loss of the function of any of these parts will significantly affect the machine performance, regardless of the presence/absence of external changes or damage.)
If possible, schedule the replacement so that it coincides with a scheduled service visit.



11.1.2 Reader Unit

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The reader unit does not have parts that require periodical replacement.

11.1.3 Printer Unit

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The printer unit does not have parts that require periodical replacement.

11.2 Consumables

11.2.1 Overview

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The machine has parts that may require replacement once or more during the period of product warranty because of wear or damage. Replace them as needed by referring to their indicated estimated lives.
- Checking the Timing of Replacement
Use the following service mode item to check the timing of replacement:
#COUNTER > DRBL-1
- FX-UNIT: Fixing Unit
- TR-ROLL: Transfer roller
- DV-UNIT-C: Developing unit
- M-PU-RL: Manual feed pickup roller
- M-SP-PD: Manual feed separation pad

11.2.2 Reader Unit

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The reader unit does not have parts that are classified as durables.

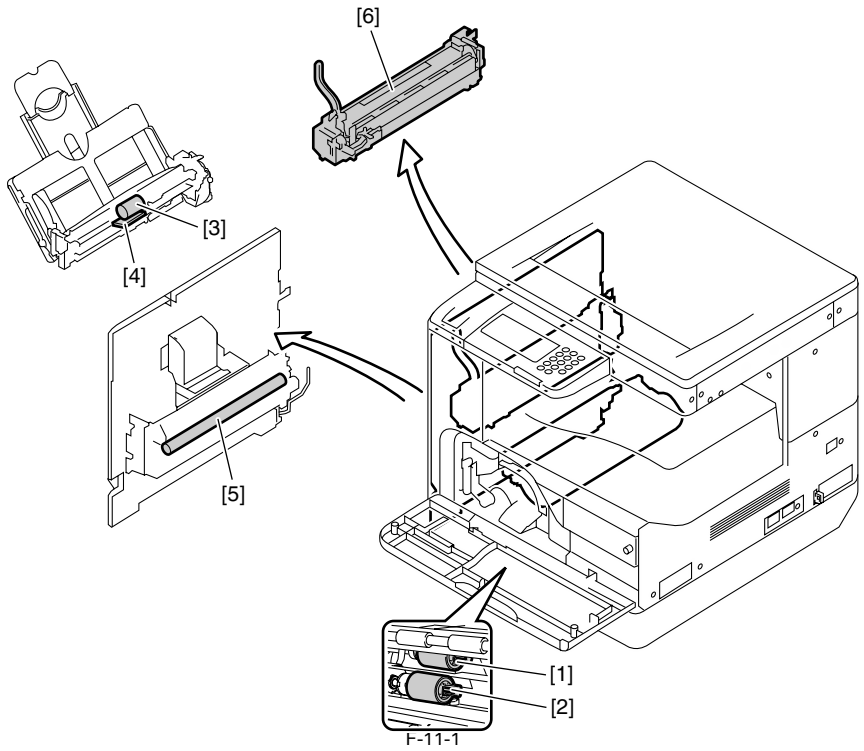
11.2.3 Printer Unit

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

As of Jun. 2007

Ref.	Parts name	Parts No.	Q'ty	Life	Remarks
[1]	Cassette feed roller	FF6-1621-000	1	100K	The 2-stage cassette type uses two rollers.
[2]	Cassette separation roller	FF6-1621-000	1	100K	The 2-stage cassette type uses two rollers.
[3]	Manual feed pickup roller	FL2-3202-000	1	150K	
[4]	Manual feed separation pad	FL2-3201-000	1	150K	
[5]	Transfer roller	FC6-4313-000	1	150K	
[6]	Fixing unit (100V)	FM3-3652-000	1	150K	
	Fixing unit (120V)	FM3-3651-000	1	150K	
	Fixing unit (230V)	FM3-3650-000	1	150K	

⚠
The value is the mean value collected from the results of evaluation. The parts number may change because of changes in design.



F-11-1

11.3 Periodical Service

11.3.1 Scheduled Servicing

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The reader and printer unit does not have items that require scheduled servicing.

⚠
Be sure to clean the copyboard glass and the ADF reading glass during every service visit.

Chapter 12 Measurement and Adjustments

Contents

12.1 Scanning System

12.1.1 Procedure after Replacing the CIS (Touch panel type)

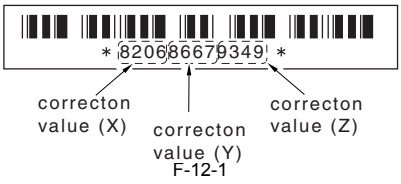
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

After replacing the contact image sensor (CIS), go through the following steps to perform inter-channel output correction:
1) Enter the service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".
5) Press the [1] key to display "SHADING".
6) Press [OK].
After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.
After completion of automatic adjustment, "OK" is displayed.

12.1.2 Procedure after Replacing the Copyboard Glass (With ADF)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

After replacing the copyboard glass, enter the correction values (X, Y, Z) of the standard white plate which are indicated on the back of the new copyboard glass in the service mode.
Correction value (X): Service mode>#SCAN>#SCAN NUMERIC>No.213
Correction value (Y): Service mode>#SCAN>#SCAN NUMERIC>No.214
Correction value (Z): Service mode>#SCAN>#SCAN NUMERIC>No.215
Also, rewrite the values on the service label.



F-12-1

12.2 Image Formation System

12.2.1 Procedure after Replacing the Developing Assembly

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<Going through the Developer Idling Mode>

> After replacing the developing assembly, go through the following steps in the developing assembly idle rotation mode before installing the toner cartridge.

1) Plug the power cord into the outlet.
2) Open the front cover.
3) With the front cover open, turn on the main power switch.
4) When a message appears on the operation panel display, press the following keys to enter the service mode:
Additional Functions key > 2 key > 8 key > Additional Functions key
5) Select "#PRINT" using the + or - key, and then press the OK key.
6) Select "#PRINT SW" using the + or - key, and hen press the OK key.
Confirm that the following message is displayed:
Message: #PRINT SW 001 00000000
7) Press the following keys and confirm the message:
key > 1 key > 1 key
Message: #PRINT SW 011 00000000
8) Position the cursor to Bit-1 (second from right) using the + or - key, and press the 1 key, and then confirm the following message:
Message: #PRINT SW 011 00000010
9) Press the OK key. Confirm that "SW 011" changes to "SW 012".
Message: #PRINT SW 012 00000000
10) Press the Reset key to exit the service mode.
11) Close the front cover. The machine will run in the developer idling mode for about 1 minute.
12) When the machine stops, the idling mode ends.
Install, the toner cartridge following the above-mentioned procedure.

12.3 Electrical Adjustments

12.3.1 Procedure after Replacing the Image Processor PCB (Touch panel

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If you have replaced the image processor PCB with a new one, perform the following operations:
- Using the service support tool, download the latest firmware (System/Boot) and language files.
- Delete the languages not used at the destination (Service mode > CLEAR > FILE SYSTEM).
- Input the all value printed on the service label affixed to the rear cover.
Make the following adjustments:
- Correction of output between CIS channels
1) Enter the service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".
5) Press the [1] key to display "SHADING".
6) Press [OK].
After completion of the above procedure, the contact sensor output is compensated and parameters are set automatically.
After completion of automatic adjustment, "OK" is displayed.
- Read position adjustment (Stream reading: Only when the ADF is installed)
1) Enter the service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].
4) Press the [2] key to display "SCAN TEST".
5) Press the [3] key to display "SHEET POS ADJ".
6) Press [OK].
The optical system starts scanning. Several seconds later, automatic adjustment of the reading position finishes and "OK" appears.

> If automatic adjustment fails, "NG" appears. Perform the following procedure:
> Clean the white roller of the DADF and the document glass of the host machine, and then retry auto adjustment.

12.3.2 Procedure after Replacing the USB Memory (Touch panel type)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If you have replaced the USB with a new one, perform the following operations:
- Using the service support tool, download language files.
- Delete the languages not used at the destination (Service mode > CLEAR > FILE SYSTEM).

> **MEMO:**
> You also need to perform these operations after formatting the damaged USB memory.

12.3.3 Actions to Take before All Clearing (Backing up the User Data)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

> - Performing the all-clear operation in the service mode (#CLEAR > ALL) erases/initializes the user data such as address data and user mode settings. Be sure to back up the user data with the data export function before starting the all-clear operation, and then load the user data with tbe data import function.
> - To export and import user data, a PC and a USB cable are required. Have them on hand.

a. Exporting user data
1) Output a user data list in the following user mode.
> Report Setting > Plint List > User Data List

2) Press the following keys to enter the service mode.

⊛ > 2 key > 8 key > ⊛

3) Select "#SYSTEM" using ◀ or ▶, and then press the OK.

4) Select "#SYSTEM SW" using ◀ or ▶, and then press the OK.

5) Press the following keys to display "SW003."
> 0 key > 3 key
Message: #SYSTEM SW003 00001000

6) Position the cursor at Bit-6 (second from left) using ◀ or ▶, and then press the 1 key.
Message: #SYSTEM SW003 01001000

7) Press the OK key. Check that "SW003" changes to "SW004".
Message: #SYSTEM SW004 00000000

8) Press the Reset key to exit the service mode.

9) Turn off the main power switch, and then turn it on again.

10) Start the PC and connect it to this machine with a USB cable.

11) Open My Computer on the PC to check that the "Removable Disk" icon is displayed. If the "Removable Disk" icon is not displayed, repeat the above procedure starting with step 1.

12) Double-click the "Removable Disk" icon, and then copy the user data (address_book.abk and user_data.dat) onto the Desktop.

13) Close the window on the Desktop.

14) Turn off the main power switch of this machine.

15) Disconnect the USB cable from this machine.

b. Importing user data

1) Press the flowing keys to enter the service mode.

⊛ > 2 key > 8 key > ⊛

2) Select "#SYSTEM" using ◀ or ▶, and then press the OK.

3) Select "#SYSTEM SW" using ◀ or ▶, and then press the OK.

4) Press the following keys to display "SW003".
> 0 key > 3 key
Message: #SYSTEM SW003 00001000

5) Check that Bit-6 (second from left) is set to set to "1". If Bit-6 is not set to "1", position the cursor at this bit using ◀ or ▶ and then press the 1 key.
Message: #SYSTEM SW003 01001000

6) Press the OK key. Check that "SW003" changes to "SW004".
Message: #SYSTEM SW004 00000000

7) Press the Reset key to exit the service mode.

8) Turn off the main power switch, and then turn it on again.

9) Open My Computer on the PC to check that the "Removal Disk" icon is displayed.

10) Write the user data (address_book.abk and user_data.dat) copied onto the Desktop as described in "a. Exporting user data" over the removable disk.

11) Disconnect the USB cable from the machine.

12) Turn off the main power switch of the machine.

13) Perform steps 1) to 4) again to reset Bit-6 of "SW003" to "0".

14) Press the OK key. When "SW003" changes to "SW004", press the Reset key to exit the service mode.

15) Check the user data list output as described in "a. Exporting user data" to make sure that the user data has been loaded into the machine properly.

Chapter 13 Correcting Faulty Images

Contents

13.1 Initial Checkup

13.1.1 Site Environment

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

a. There must be a source of power whose voltage is as specified (+/-10%). The power plug must never be disconnected day and night.
b. The machine must not be in an area subject to high humidity (near a water faucet, water boiler, humidifier). The site must not be too cold or subject to dust. The machine must not be near a source of fire.
c. The site must not be subject to ammonium gas.
d. The machine must not be exposed to the rays of the sun. As necessary, curtains must be provided.
e. The area must be well ventilated. The machine must be on a level floor.
f. Be sure that there is a source of power that can be used by the machine.

13.1.2 Checking the Paper

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

a. Be sure the paper being used is of a type recommended by Canon.
b. Be sure that the paper is not moist. Try using paper fresh out of package.

13.1.3 Checking the Placement of Paper

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

a. There must be paper in the cassette or the tray deposited within a specific limit.
b. If transparencies are used, be sure that they are placed in the manual feed tray in the correct orientation.

13.1.4 Checking the Durables

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Refer to the table of durables, and replace those that have reached the end of their lives.

13.1.5 Checking the Units and Functional Systems

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<Reader>
- Check whether the optical system (contact sensor/white panel/copyboard glass) is free from scratches, stain, foreign objects.
- Check whether the contact sensor unit moves smoothly. Check whether the rails are free from dirt.
- Check whether the contact sensor is not flickering.
- Check whether the optical system is free from dew condensation.

<Process>
- Check whether the drum unit and toner bottle are installed securely.
- Check whether the photoconductor drum is free from scratches and stain.

<Transfer>
- Check whether the transfer roller is free from scratches, stain, and deformation.

<Fixing>
- Check whether the fixing film and pressure roller are free from wear, scratches, dirt, and deformation.
- Check whether the fixing thermistor is broken.
- Check whether the thermo switch is conductive.

<Paper transport >
- Check whether the paper transport path is free from foreign objects such as paper chips.
- Check whether the paper pickup, feed, and separation rollers are free from paper dust. Also check whether these rollers are free from wear, scratches, dirt, and deformation.
- Check whether the registration roller and paper path are free from wear, scratches, dirt, and deformation.
- Check whether the transport guide is free from wear, scratches, dirt, and deformation.
- Check whether the leading edge of paper is not folded, curled, wavy, or damp.
- Check whether use of the Canon-recommended paper/transparency solves the problem.

<Machine>
- Check whether the drive system load is heavy.
- Check whether gears are worn or cracked?

<Cassette>
- Check whether the cassette is installed properly. Check whether the paper size is set properly. Check whether the same symptom occurs when the cassette is replaced with the cassette verified to be normal.
- Check whether the middle plate of the cassette moves smoothly. Check whether it is deformed.
- Check whether the side and rear alignment plates are adjusted properly.
- Check whether the cassette heater switch is turned on (when a cassette heater is installed).

<Service Mode>
- Check whether various adjustment values are the same as those printed on the service label.
- Check whether the output between CIS channels has been corrected.
(Service mode>TEST MODE>"2"(SCANTEST)>"1")
- Check whether the read position has been adjusted properly. (Stream reading: Only when the ADF is installed)
(Service mode>TEST MODE>"2"(SCANTEST)>"3"(SHEET POS ADJ))
- Check whether the error has been cleared.
(Service mode>CLEAR>ERR)

<General>
- Check whether the power cord is plugged in the outlet securely.
- Check whether the specified AC voltage is applied to the outlet.
- Check whether sensors, clutches, motors, and solenoids are operating normally. Check whether connectors are connected properly.

(Check the power supply and signal routes with reference to the general circuit diagram.)
- Check whether all cables are routed properly and all screws are not loose.
- Check whether all outer covers are attached.
- Check whether the main power switch and the power switch on the operation pane are turned on.
- Check the power cables and signal cables of options are connected properly.
- Check whether no fuse on PCBs is blown.
- Check whether the user uses the machine properly.

13.1.6 Others

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If a machine is brought from a cold to warm room, its inside can start to develop condensation, leading to various problems.
a. condensation on the BD sensor is likely to cause problems associated with E100
b. condensation on the dust-proof glass is likely to cause poor image density in sub scanning direction
c. condensation on the contact sensor of the reader unit or on the copyboard glass can cause light images
d. condensation on the pickup or feed guide can cause paper feed problems

If the problem given in d. above has occurred, dry wipe the units in the feed system. Do not open the package containing a toner cartridge, developing unit, or drum unit right after it has been brought in from a cold to warm place to avoid condensation. Be sure to leave it alone for a while (1 to 2 hr), opening it after it has become fully used to the temperature of the site.

13.2 Outline of Electrical Components

13.2.1 Cluth/Solenoid

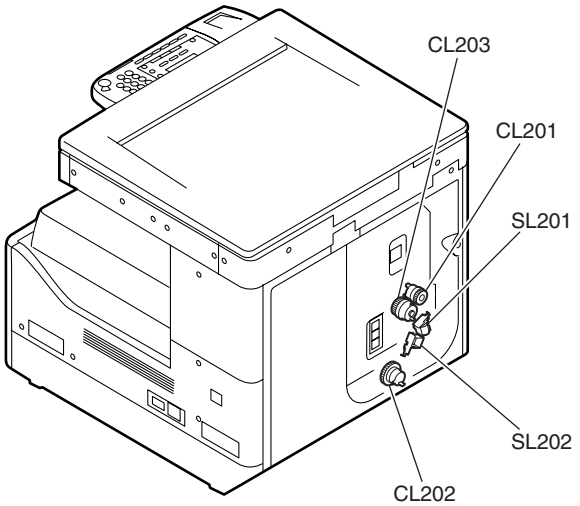
13.2.1.1 List of Clutches/Solenoids

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<Reader Unit>
The reader unit has no clutch/solenoid.
<Printer Unit>

Symbol	Name	Function
CL201	Manual pickup clutch	Drives the manual pickup roller.
CL202	Cassette feed clutch	Drives the cassette feed roller.
CL203	Registration clutch	Drives the registration clutch.
SL201	Manual pickup solenoid	Drives the manual pickup roller.
SL202	Cassette 1 pickup solenoid	Drives the cassette 1 pickup roller.

Symbol	Part No.	DC controller PCB
CL201	FK2-1070	J219
CL202	FK2-5367	J211
CL203	FK2-5350	J210
SL201	FK2-1072	J219
SL202	FK2-1082	J209



F-13-1

13.2.2 Motor

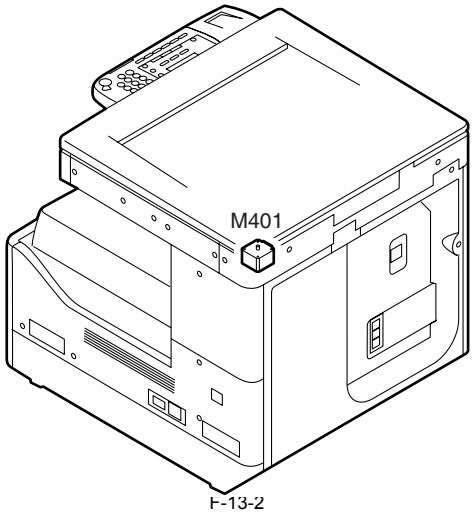
13.2.2.1 List of Motors

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<Reader Unit>

Symbol	Name	Function
M401	Reader motor	Drives the carriage.

Symbol	Part No.	Reader controller PCB	Error
M401	FK2-1066	J409	

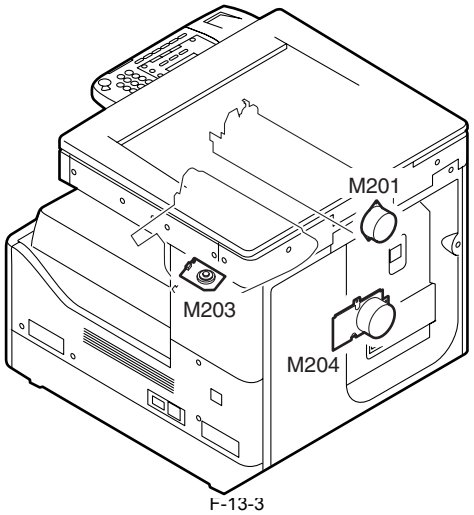


F-13-2

<Printer Unit>

Symbol	Name	Function
M201	Fixing motor	Drives the fixing unit.
M203	Polygon motor	Drives the laser scanner.
M204	Main motor	Drives the main parts of the printer.

Symbol	Part No.	DC controller PCB	Error
M201	FK2-5348	J202	E007, E808
M203	Scanner unit FM3-3695	J205	
M204	FK2-5347	J208	E010



F-13-3

13.2.3 Fan

13.2.3.1 List of Fans

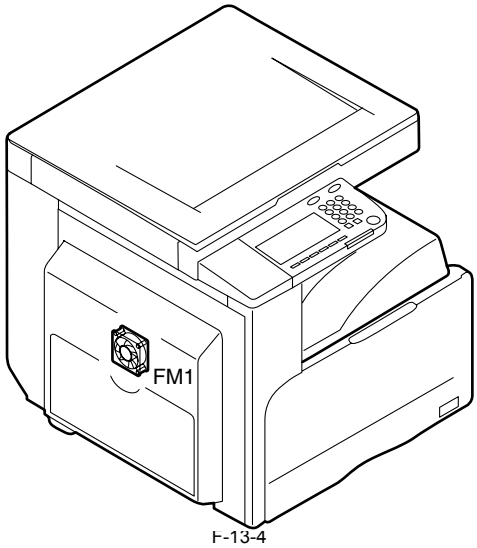
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<Reader Unit>
The reader unit has no fan.
<Printer Unit>

T-13-1

Symbol	Name	Function
FM1	Heat discharge fan	Cools fixing unit.

Symbol	Part No.	DC controller PCB	Error
FM1	FK2-5368	J219	E805



F-13-4

13.2.4 Sensor

13.2.4.1 List of Sensors

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

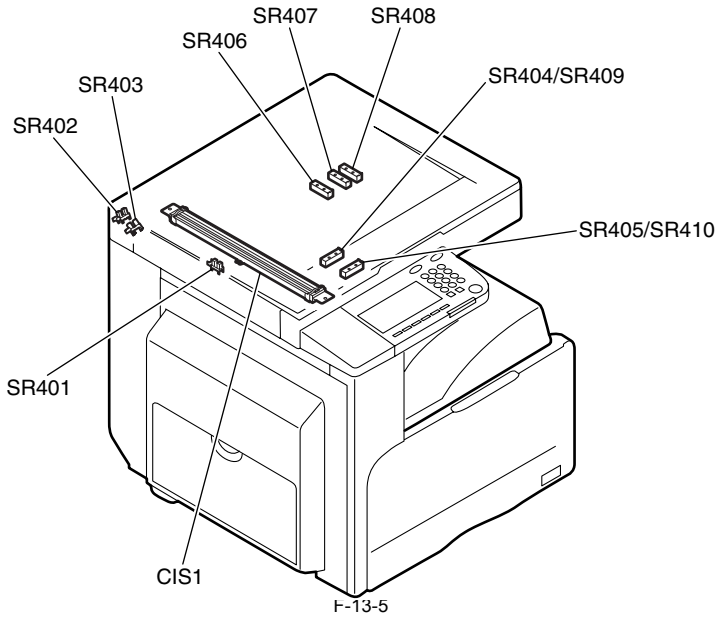
<Reader Unit>

T-13-2

Symbol	Name	Function
SR401	CIS HP sensor	Detects the CIS home position.
SR402	Copyboard cover open/closed sensor (rear)	Detects opening/closing of the copyboard cover.
SR403	Copyboard cover open/closed sensor (front)	Detects opening/closing of the copyboard cover.
SR404	Original sensor 1	Detects the original size (AB or INCH/AB).
SR405	Original sensor 2	Detects the original size (AB or INCH/AB).
SR406	Original sensor 3	Detects the original size (all destinations).
SR407	Original sensor 4	Detects the original size (AB or INCH/AB).
SR408	Original sensor 5	Detects the original size (INCH/A).
SR409	Original sensor 5	Detects the original size (INCH).
SR410	Original sensor 5	Detects the original size (A).
CIS1	CIS	Reads the original.

T-13-3

Symbol	Part No.	Reader controller PCB	Jam code
SR401	WG8-5696	J406	
SR402	WG8-5696	J405	
SR403	WG8-5696	J405	000f
SR404	FH7-7569	J407	
SR405	FH7-7569	J407	
SR406	FH7-7569	J413	
SR407	FH7-7569	J413	
SR408	FH7-7569	J1926	
SR409	FH7-7569	J1927	
SR410	FH7-7569	J1928	
CIS1	FM2-3369	J408	



F-13-5

<Printer Unit>

T-13-4

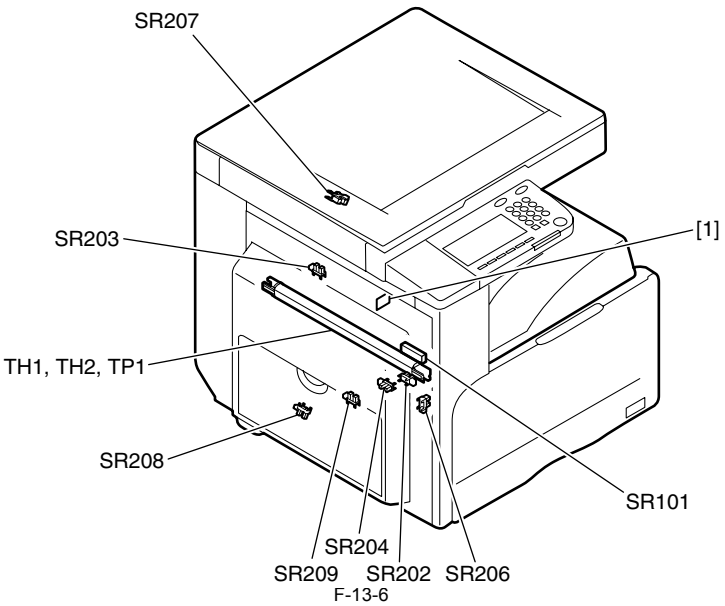
Symbol	Name	Function
SR101	Fixing film speed sensor	Detects the fixing film speed.
SR202	Fixing delivery sensor	Detects fixing delivery.
SR203	No.1 delivery sensor	Detects delivery.
SR204	Cassette 1 paper sensor	Detects presence/absence of cassette 1 paper.
SR206	Waste toner full detection sensor	Detects the waste toner full status.
SR207	No.1 paper full sensor	Detects the No.1 paper full status.
SR208	Manual paper sensor	Detects presence/absence of manually fed paper.
SR209	Registration sensor	Detects registration paper.
SR210	Timing sensor	Detects refeeding.
[1]	Humidity sensor PCB	Detects humidity.
TH1	Fixing main thermistor	Detects the fixing heater temperature.
TH2	Fixing sub thermistor	Detects the fixing heater temperature.
TP1	Thermo switch	Cuts off the heater power supply line when an abnormal temperature is detected.

T-13-5

Symbol	Part No.	DC controller PCB	Jam code
SR201	FG3-3501	J217	
SR202	WG8-5696	J217	010c, 0210, 0214, 1118
SR203	WG8-5696	J221	010c, 0210, 0214, 1118
SR204	WG8-5696	J213	
SR206	WG8-5696	J216	
SR207	WG8-5696	J201	
SR208	WG8-5696	J219	
SR209	WG8-5696	J212	0104, 0208, 010c, 0214, 1118
[1]	WP2-5254	J222	

T-13-6

Symbol	Part No.	DC controller PCB	Power supply PCB
TH1,TH2	Fixing film unit FM3-3654(120V) FM3-3653(230V)	J217	
TP1			J13



F-13-6

13.2.5 Switch

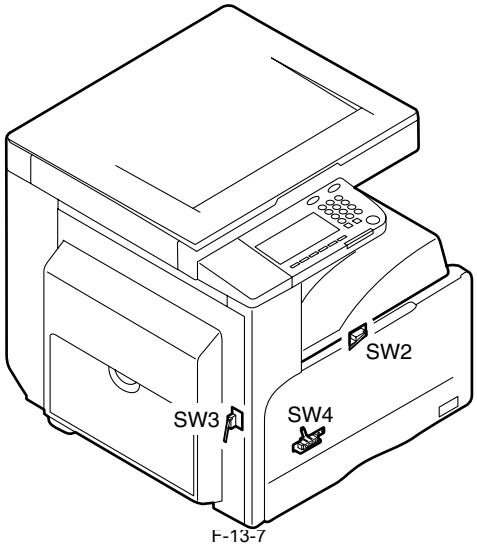
13.2.5.1 List of Switches

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<Reader Unit>
The reader unit has no switch.
<Printer Unit>

Symbol	Name	Function
SW2	Front cover switch	Detects opening/closing of the front cover.
SW3	Left door switch	Detects opening/closing of the left door.
SW4	Cassette 1 size detection switch	Detects the cassette 1 paper size.

Symbol	Part No.	DC controller PCB	Power supply PCB
SW2	FM2-4433		J12
SW3	FM2-4020		J12
SW4	WC2-5332	J213	



F-13-7

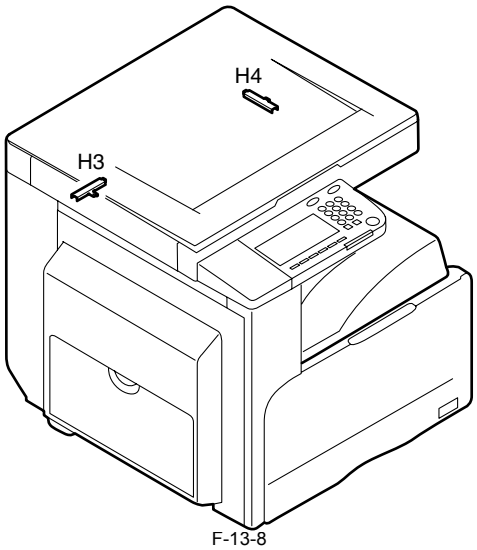
13.2.6 Lamps, Heaters, and Others

13.2.6.1 List of Lamps, Heaters, and Others

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<Reader Unit>

Symbol	Name	Part No.	Function
H3	Reader heater (left)	NPN	Prevents dew condensation on the ADF reading glass.
H4	Reader heater (right)	NPN	Prevents dew condensation on the copyboard glass.



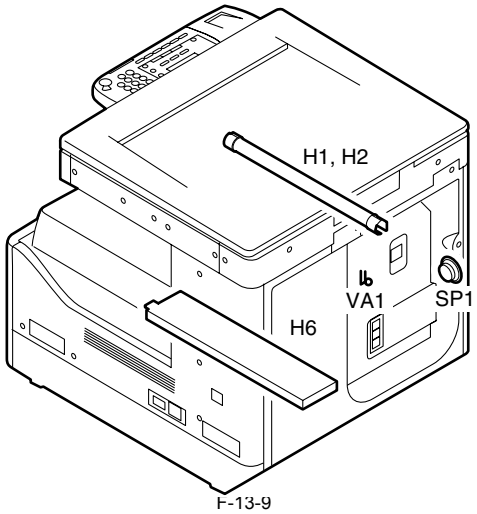
F-13-8

<Printer unit>

Symbol	Name	Function
H1	Fixing main heater	Used as the main heater for fixing.
H2	Fixing sub heater	Used as the sub heater for fixing.
H6	Cassette heater	Prevents paper in the cassette from absorbing moisture.
VA1	Varistor	Used as a varistor.
SP1	Speaker	Used as a speaker (for fax unit).

Symbol	Part No.
H1,H2	Fixing film unit FM3-3654(120V) FM3-3653(230V)
H6	FM3-3712(100V) FM3-3714(230V)

Symbol	Part No.	Modem PCB
VA1	FH5-3543	
SP1	FK2-1265	J1203



F-13-9

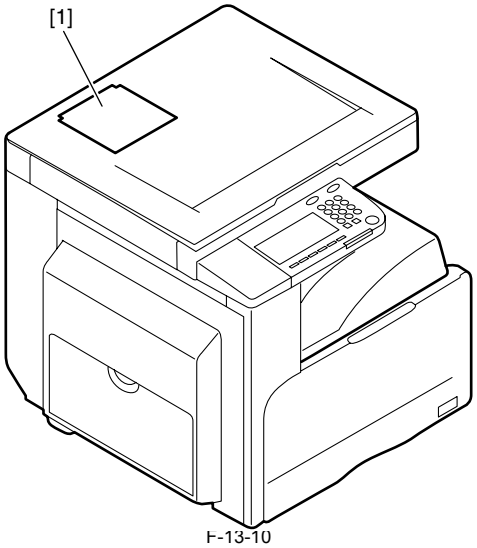
13.2.7 PCBs

13.2.7.1 List of PCBs

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<Reader Unit>

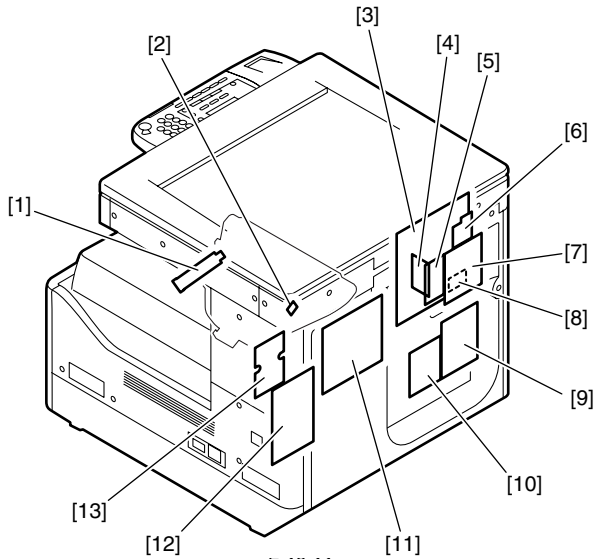
Symbol	Name	Part No.	Function
[1]	Reader controller PCB	FM2-4792	controls the reader unit/ADF



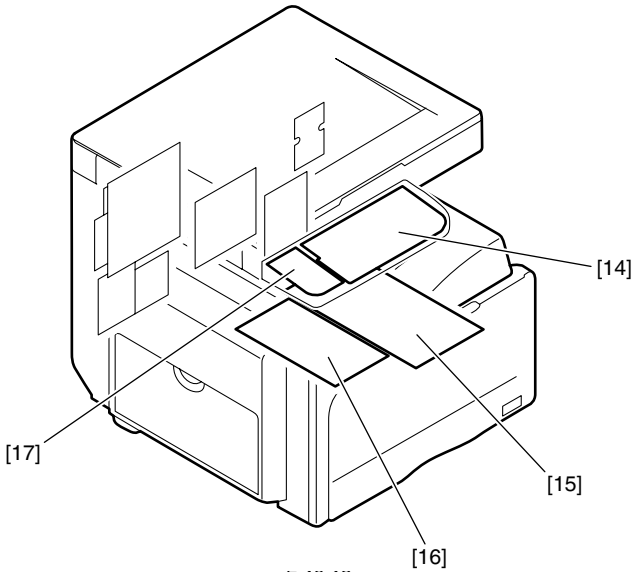
F-13-10

<Printer unit>

Symbol	Name	Part No.	Function
[1]	Laser driver PCB	Scanner unit FM3-3695	controls the laser unit drive
[2]	BD PCB		generates the BD signal
[3]	Image processor PCB	FM3-3320(LCD type) FM3-3319(Touch panel type)	processes output image data for the printer unit
[4]	128MB RAM	FM3-3324	temporarily retains image data
[5]	LAN PCB	FM3-3323	network interface/printer function control
[6]	Seriar interface PCB	FM2-4062(SERIAL INTERFACE-A2) FM3-3326(Serial Interface Kit-H1)	coin vendor interface
[7]	Modem PCB	FM3-3321	control the fax
[8]	PCL PCB	FM3-3328(LCD type) FM3-3329(Touch panel type)	PCL function control
[9]	NCU PCB	FM3-3332	controls the line switching operation
[10]	modular PCB	FM2-4777(120V) FM2-4772(230V)	fax line interface
[11]	DC controller PCB	FM3-2992:120V/18cpm FM3-2993:230V/18cpm FM3-2994:120V/22cpm FM3-2995:230V/22cpm FM3-2996:120V/25cpm FM3-2997:230V/25cpm FM3-2998:120V/30cpm FM3-2999:230V/30cpm	controls the printer unit/option
[12]	Option power supply PCB	FK2-1085(120V) FK2-1086(230V)	Option power supply
[13]	Heater PCB	FM2-4021	heater power switch
[14]	Operation panel PCB	Operation panel unit FK2-5340(LCD type: USA/others) FK2-5341(LCD type: Europe) FK2-5342(LCD type: China) FK2-5343(LCD type: Taiwan) FK2-5344(LCD type: Korea) FM3-3620(Touch panel type)	controls the operation panel
[15]	Power supply PCB	FK2-5355(120V) FK2-5356(230V)	printer power supply
[16]	HVT PCB	FM3-2987	high-voltage power supply
[17]	FAX PANEL PCB	FM3-2991	control the fax panel



F-13-11



F-13-12

Chapter 14 Error Code

Contents

14.1 Error Code Table

14.1.1 List of Error Codes

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-1

Error Code	Detail Code	Error Name/Explanation of Error
E000	0000	Fixing temperature abnormal rise
E001	0000	Fixing unit temperature rise detection (by main thermistor)
	0001	Fixing unit temperature rise detection (by sub thermistor)
E002	0000	Fixing unit temperature insufficient rise
E003	0000	Low fixing temperature detection after standby (by main thermistor)
	0001	Low fixing temperature detection after standby (by sub thermistor)
E007	0000	Fixing film rotation error
E010	0000	Main motor rotation error
E019	0001	Waste toner full detection
	0002	Waster toner full detection sensor failure
E052	0000	Duplex unit connection error
E100	0000	BD cycle out of range
E196	0001	Error on writing and readout ROM of image processor PCB (main ROM).
	0002	Error on writing and readout ROM of image processor PCB (option ROM).
E197	0000	Erroneous communication with printer engine
E261	0000	Zero-cross signal error
E500	0001	Finisher communication error
E520	0000	Offset error
E531	0000	Stapling error
E540	0001	Paper surface not detected (standard tray)
	0002	Not moved within the specified time (standard tray)
	0003	Sensor not reached within 3 seconds (standard tray)
	0005	Encoder clock failure (standard tray)
E542	0001	Paper surface not detected (optional tray)
	0002	Not moved within the specified time (optional tray)
	0003	Sensor not reached within 3 seconds (optional tray)
	0005	Encoder clock failure (optional tray)
E575	0000	Stack delivery error
E584	0000	Shutter failure
E716	0000	Erroneous communication with optional cassette
E719	0000	Erroneous communication with card reader (serial communication)
	0002	Erroneous communication with coin vender (serial communication)
E730	0000	Inside error of the image processor PCB (PDL system error)
E733	0000	Erroneous communication between controller and printer
E736	0000	CCU communication error
E739	0000	Erroneous communication between controller and network board
E744	0001	Language file/boot ROM/USB memory error
	0002	
	0003	
	0004	
E805	0000	Fan failure
E808	0000	Fixing drive circuit failure

14.2 Error Code Details

14.2.1 Error Code Details

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-2

Display Code	Detail Code	Main Cause/Symptom	Countermeasure
E000	0000	Startup error	
		The temperature detected by the main or sub thermistor does not rise to the specified value during startup control.	- Check the fixing film connector. - Replace the fixing film unit. - Replace the DC controller PCB.
E001	0000	Abnormally high temperature (detected by main thermistor)	
		The main thermistor detected an abnormally high temperature (240 deg C) during temperature control.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the DC controller PCB.
	0001	Abnormally high temperature (detected by sub thermistor)	
		The sub thermistor detected an abnormally high temperature (295 deg C) during temperature control.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the DC controller PCB.
E002	0000	Low temperature during temperature control.	
		The target temperature is not reached during temperature control.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the DC controller PCB.
E003	0000	Abnormally low temperature (detected by main thermistor)	
		After the temperature detected by the main thermistor has reached the specified value, it does not reach the specified value during initial rotation.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the DC controller PCB.
	0001	Abnormally low temperature (detected by sub thermistor)	
		After the temperature detected by the sub thermistor has reached the specified value, it does not reach the specified value during initial rotation.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the DC controller PCB.
E007	0000	Fixing film sensor failure	
		The fixing film sensor is faulty.	- Check the connector of the fixing film sensor. - Replace the fixing film sensor. - Replace the DC controller PCB.
E010	0000	Main motor failure	
		The main motor is faulty.	- Check the connector of the main motor. - Replace the main motor. - Replace the DC controller PCB.
E019	0000	Waste toner full detection	
		The waste toner full state was detected.	Replace the drum unit.
	0001	Waster toner full detection sensor is faulty.	
		The waste toner full state was detected continuously for five or more seconds while the main motor was turning.	- Check the connector of the waster toner full sensor. - Replace the waste toner full sensor. - Replace the DC controller PCB.
E052	0000	Erroneous connection to duplex unit	
		Disconnection of the duplex unit was detected after power-on, detection of normal connection to the duplex unit, and start of communication.	- Check the connectors of the duplex unit and DC controller PCB. - Replace the duplex controller PCB. - Replace the DC controller PCB.
E100	0000	BD detection PCB failure	
		The BD detection PCB is faulty.	- Check the connector of the BD detection PCB. - Replace the laser scanner unit. - Replace the DC controller PCB.

Display Code	Detail Code	Main Cause/Symptom	Countermeasure
E196	0001	Image processor PCB failure	
		Error on writing and readout ROM of image processor PCB (mainn ROM).	- Putting the switch on/off of the power supply. - Replace the image processor PCB.
	0002	Image processor PCB failure	
		Error on writing and readout ROM of image processor PCB (option ROM).	- Putting the switch on/off of the power supply. - Replace the image processor PCB.
E197	0000	Printer engine communication error	
		Erroneous communication between the DC controller PCB and image processor PCB was detected.	- Check the connectors of the DC controller PCB and image processor PCB. - Replace the DC controller PCB for normal connection. - Replace the image processor PCB.
E261	0000	Zero-cross signal error	
		If failed to detect zero-cross signal cycle of the power supply when initializing. When the input of the zero-signal failed continuously for three seconds while controlling the temperature adjustment.	- Replace the power supply PCB. - Replace the DC controller PCB.
E716	0000	Erroneous communication with optional cassette	
		Disconnection of the optional cassette was detected after power-on, detection of normal connection to the optional cassette, and start of communication.	- Check the connectors of the optional cassette PCB and DC controller PCB. - Replace the optional cassette PCB for normal connection. - Replace the DC controller PCB.
E719	0000	Erroneous communication with card reader (serial communication)	
		- Disconnection from the card reader has been detected since communication started after confirmation of normal connection to the card reader (after power-on). - A serial communication error has occurred. (The serial communication error cannot be recovered.)	- Check the connectors of the card reader and image processor PCB. - Replace the card reader for normal connection. - Replace the image processor PCB.
	0002	Erroneous communication with coin vendor (serial communication)	
		- Disconnection from the coin vendor has been detected since communication started after confirmation of normal connection to the coin vendor (after power-on). - A serial communication error has occurred. (The serial communication error cannot be recovered.)	- Check the connection between the image processor PCB and serial PCB. - Check the connectors of the serial PCB and coin vendor for normal connection. - Replace the serial PCB. - Check the coin vendor. - Replace the image processor PCB.
E730	0000	Inside error of the image processor PCB (PDL system error)	
		The inside of the image processor PCB is faulty.	- Putting the switch on/off of the power supply. - Replace the image processor PCB.
E733	0000	Erroneous communication between controller and printer	
		Cannot communicate with the printer at startup.	- Check the connectors of the DC controller PCB and image processor PCB for normal connection. - Check the power supply of the printer (Check whether initialization is performed at startup). - Replace the DC controller PCB or image processor PCB.
E736	0000	CCU communication error	
		The installed modem PCB is incompatible.	- Check the connectors of the image processor PCB and modem. - Replace the modem PCB. - Replace the image processor PCB.

Display Code	Detail Code	Main Cause/Symptom	Countermeasure
E739	0000	Erroneous communication between controller and network board	
		The installed network board is incompatible.	- Check the connectors of the image processor PCB and LAN PCB for normal connection. - Replace the LAN PCB. - Replace the image processor PCB.
E744		Language file/boot ROM/USB memory error	
	0001	The language file version does not match Bootable.	Download a language file of the correct version.
	0002	The language file is longer than the permitted size.	Download a language file of the correct version.
	0003	The language file version does not match Bootable.	Download a language file of the correct version.
	0004	Language file read error	Download a language file of the correct version.
E805	0000	Fan failure	
		The fan is faulty.	- Check the fan connector. - Replace the fan. - Replace the DC controller PCB.
E808	0000	Fixing drive circuit failure	
		- The heater does not turn on. - A fixing drive motor failure was detected.	- Check the connector of the fixing film unit. - Replace the fixing film unit. - Replace the fixing drive motor. - Replace the DC controller PCB. - Replace the power supply PCB.

14.3 Jam Code

14.3.1 Jam Codes (Related to Printer Unit)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-3

Code	Name	Sensor No.	Description
0104	Delay jam in paper pickup section	SR209	The registration sensor cannot detect the leading edge of paper from the moment paper pickup starts to the moment the jam detection time is reached.
0208	Stationary jam in paper pickup section	SR209	The registration sensor cannot detect the no paper status specified time before the leading edge of the picked up paper reaches this sensor.
010c	Delay jam in deliver section	SR202, SR203, SR209	- The fixing delivery sensor cannot detect presence of paper within the specified time after turning on of the registration clutch. - The fixing delivery sensor detected absence of paper within the specified time after the sensor had detected presence of paper within the specified time after turning on of the registration clutch. - The No.1 delivery sensor cannot detect presence of paper within the specified time after turning on of the fixing delivery sensor.
0210	Stationary jam in delivery section	SR202, SR203	- The fixing delivery sensor cannot detect absence of paper within the specified time after turning off of the registration clutch. - The fixing delivery sensor cannot detect absence of paper within the specified time after the sensor detected the leading edge of paper. - The No.1 delivery sensor cannot detect absence of paper within the specified time after the sensor detected the leading edge of paper.
0214	Stationary jam in machine	SR202, SR203, SR209	Paper was detected in the paper transport path during initial rotation, during automatic delivery, at the end of cleaning, or at reception of an emergency stop command.
1118	Door open jam	SR202, SR203, SR209, SW2, SW3	The door was opened when there was printing paper in the transport path.

14.3.2 Jam Codes (Related to Finisher)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-4

Code	Name	Sensor No.	Description
0130	Delayed feed jam	PI5	The inlet sensor is not turned on within the specified time after reception of a paper ejection signal from the host machine.
0231	Staying paper jam	PI5	The inlet sensor is not turned off even if paper is fed by the specified distance after the leading edge of the paper from the host machine has passed through the sensor.
0033	Stack ejection jam	PI1	When a paper stack is ejected, the HP sensor is not turned off within the specified time.
0035	Staple jam	Stapler HP sensor (built in stapler)	The stapler HP sensor was turned off once after start of stapler operation, but the HP has not been reached within the specified time.
1036	Power-on jam	PI5	The inlet sensor detected paper at power-on.
1137	Door open jam	SW1	The front cover switch detected opening of the front cover during standby or copy operation.

14.3.3 Jam Codes (Related to ADF)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-5

Code	Name	Sensor No.	Description
0000	Unknown jam	-	Other errors
0007	Initial stationary	PI6,PI7,PI8	Paper is detected in the transport path before the DADF starts initial operation.
0008	Read sensor delay	PI7,PI8	The read sensor does not detect paper when the paper has been fed by the predetermined distance since reception of a pickup request.
0009	Read sensor stationary	PI7	The trailing edge of paper is not detected when the paper has been fed by the predetermined distance since detection of it by the read sensor.
000a	Paper absence (Pull out the document.)	PI11	The Document set sensor has been held off since start of pickup.
000c	Delivery reversal sensor delay	PI6,PI7	The delivery reversal sensor does not detect paper since the paper has been fed by the predetermined distance since the read sensor was turned on.
000d	Delivery reversal sensor stationary	PI6	The trailing edge of paper is not detected when the paper has been fed by the predetermined distance since the delivery reversal sensor detected the paper.
000e	ADF cover open	PI10	The feeder cover was opened during operation (of the drive system).
000f	User ADF open	sensor of the reader unit	The ADF was opened during operation (of the drive system).
0010	Pickup NG	-	The registration sensor has been held off since paper pickup started.

14.3.4 Jam Codes (Related to Duplex Unit)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-6

Code	Name	Sensor No.	Description
0120	Delay jam at duplex paper sensor 1	SR1002	The duplex paper sensor 1 does not turn on within the specified time after the delivery sensor on the main unit side turns on.
0124	Delay jam at duplex paper sensor 2	SR1003	The duplex paper sensor 2 does not turn on within the specified time after the duplex reverse motor starts.
0221	Stationary jam at duplex paper sensor 1	SR1002	- The duplex paper sensor 1 does not turn off when the specified time has lapsed since the duplex paper sensor 2 turned on.
			- The duplex paper sensor 1 does not turn off when the paper with a longitudinal length of 280 mm reaches the standby position (about 90 mm from the duplex paper sensor 2).
0228	Stationary jam at duplex paper sensor 2	SR1003	The duplex paper sensor 2 does not turn off when the specified time has lapsed since the feed motor started.

14.3.5 Jam Codes (Related to Inner 2-way Tray)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-7

Code	Name	Sensor No.	Description
010e	Delay jam at No.2 delivery section	SR1101	The No.2 delivery sensor does not detect presence of paper within the specified time after turning on of the fixing delivery sensor.
0212	Stationary jam at No.2 delivery section	SR1101	Absence of paper is not detected within the specified time after turning on of the No.2 delivery sensor.

14.4 Finisher Error Codes

14.4.1 Error Code Details

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-8

Display code	Detail Code	Main Cause/Symptom	Countermeasure
E500	0001	Finisher communication error	
		Data communication could not be performed normally. It has been retried three times in vain.	- Check the connectors of the finisher controller PCB and DC controller PCB for normal connection. - Replace the finisher controller PCB. - Replace the DC controller PCB.
E520	0001	- Offset motor or finisher controller PCB failure - Offset HP sensor failure	
		- The offset motor was driven for 1000 ms in the HP sensor approach direction, but the offset HP sensor did not turn on.	- Check the connector of the offset HP sensor. - Check the connector of the offset motor. - Replace the offset HP sensor. - Replace the offset motor. - Replace the finisher controller PCB.
	0002	- Offset motor or finisher controller PCB failure - Offset HP sensor failure	
		- The offset motor was driven for 1000 ms in the HP sensor escape direction, but the offset HP sensor did not turn off.	- Check the connector of the offset HP sensor. - Check the connector of the offset motor. - Replace the offset HP sensor. - Replace the offset motor. - Replace the finisher controller PCB.
E531	0001	- Staple unit failure - Staple HP sensor failure - Finisher controller PCB failure	
		- The staple home position was not left when 400 ms have lapsed since start of staple operation.	- Check the connector of the staple unit. - Replace the staple unit. - Replace the finisher controller PCB.
	0002	- Staple unit failure - Staple HP sensor failure - Finisher controller PCB failure	
		- The staple home position had been left once, but it was not reached again when 400 ms have lapsed since start of staple operation. In addition, the staple home position could not be reached by performing reverse operation for 400 ms.	- Check the connector of the staple unit. - Replace the staple unit. - Replace the finisher controller PCB.

Display code	Detail Code	Main Cause/Symptom	Countermeasure
E540	0001	- Standard tray shift motor or finisher controller PCB failure - Standard tray HP sensor failure - Standard tray clock sensor failure - Standard tray shift motor load failure	
		The standard tray was moved but the paper surface was not detected.	- Check the connector of the standard tray HP sensor. - Check the connector of the standard tray clock sensor. - Check the connector of the standard tray shift motor. - Replace the standard tray HP sensor. - Replace the standard tray clock sensor. - Replace the standard tray shift motor. - Replace the finisher controller PCB.
	0002	- Standard tray shift motor or finisher controller PCB failure - Standard tray HP sensor failure - Standard tray clock sensor failure - Standard tray shift motor load failure	
		Cannot move (to the pickup position) within the specified time.	- Check the connector of the standard tray HP sensor. - Check the connector of the standard tray clock sensor. - Check the connector of the standard tray shift motor. - Replace the standard tray HP sensor. - Replace the standard tray clock sensor. - Replace the standard tray shift motor. - Replace the finisher controller PCB.
	0003	- Standard tray shift motor or finisher controller PCB failure - Standard tray HP sensor failure - Standard tray clock sensor failure - Standard tray shift motor load failure	
		The standard tray was operated, but it did not reach the sensor within 300 ms.	- Check the connector of the standard tray HP sensor. - Check the connector of the standard tray clock sensor. - Check the connector of the standard tray shift motor. - Replace the standard tray HP sensor. - Replace the standard tray clock sensor. - Replace the standard tray shift motor. - Replace the finisher controller PCB.
	0005	- Standard tray shift motor or finisher controller PCB failure - Standard tray HP sensor failure - Standard tray clock sensor failure - Standard tray shift motor load failure	
		The encoder clock signal was not detected two or more times when the standard tray was operated for 300 ms.	- Check the connector of the standard tray HP sensor. - Check the connector of the standard tray clock sensor. - Check the connector of the standard tray shift motor. - Replace the standard tray HP sensor. - Replace the standard tray clock sensor. - Replace the standard tray shift motor. - Replace the finisher controller PCB.

Display code	Detail Code	Main Cause/Symptom	Countermeasure
E542	0001	- Optional tray motor or finisher controller PCB failure - Optional tray HP sensor failure - Optional tray clock sensor failure - Optional tray shift motor load failure	
		The optional tray was operated, but the paper surface was not detected.	- Check the connector of the optional tray HP sensor. - Check the connector of the optional tray clock sensor. - Check the connector of the optional tray shift motor. - Replace the optional tray HP sensor. - Replace the optional tray clock sensor. - Replace the optional tray shift motor. - Replace the finisher controller PCB.
	0002	- Optional tray motor or finisher controller PCB failure - Optional tray HP sensor failure - Optional tray clock sensor failure - Optional tray shift motor load failure	
		Cannot move (to the pickup position) within the specified time.	- Check the connector of the optional tray HP sensor. - Check the connector of the optional tray clock sensor. - Check the connector of the optional tray shift motor. - Replace the optional tray HP sensor. - Replace the optional tray clock sensor. - Replace the optional tray shift motor. - Replace the finisher controller PCB.
	0003	- Optional tray motor or finisher controller PCB failure - Optional tray HP sensor failure - Optional tray clock sensor failure - Optional tray shift motor load failure	
		- The optional tray was moved upward, but it did not reach the HP sensor within 3000 ms.	- Check the connector of the optional tray HP sensor. - Check the connector of the optional tray clock sensor. - Check the connector of the optional tray shift motor. - Replace the optional tray HP sensor. - Replace the optional tray clock sensor. - Replace the optional tray shift motor. - Replace the finisher controller PCB.
	0005	- Optional tray motor or finisher controller PCB failure - Optional tray HP sensor failure - Optional tray clock sensor failure - Optional tray shift motor load failure	
		- The encoder clock signal was not detected two or more times when the optional tray was operated for 300 ms.	- Check the connector of the optional tray HP sensor. - Check the connector of the optional tray clock sensor. - Check the connector of the optional tray shift motor. - Replace the optional tray HP sensor. - Replace the optional tray clock sensor. - Replace the optional tray shift motor. - Replace the finisher controller PCB.
E575	0001	- Stack delivery motor or finisher controller PCB failure - Stack delivery HP sensor failure	
		- The stack delivery motor was driven for 2000 ms in the stack delivery direction (HP sensor approach direction), but the stack delivery HP sensor did not turn on.	- Check the connector of the stack delivery HP sensor. - Check the connector of the stack delivery motor. - Check the connector of the stack delivery HP sensor. - Replace the stack delivery motor. - Replace the finisher controller PCB.
	0002	- Stack delivery motor or finisher controller PCB failure - Stack delivery HP sensor failure	
		- The stack delivery motor was driven for 2000 ms in the HP sensor escape direction, but the stack delivery HP sensor did not turn off.	- Check the connector of the stack delivery HP sensor. - Check the connector of the stack delivery motor. - Check the connector of the stack delivery HP sensor. - Replace the stack delivery motor. - Replace the finisher controller PCB.
E584	0001	- Shutter drive motor or finisher controller PCB failure - Shutter open detection sensor failure - Shutter clutch failure	
		- The shutter open sensor did not turn on when 1000 ms have lapsed since the shutter unit had performed open operation, resulting in incomplete open operation.	- Check the connector of the shutter open sensor. - Check the connector of the shutter clutch. - Check the connector of the shutter motor. - Replace the shutter open sensor. - Replace the shutter clutch. - Replace the shutter drive motor. - Replace the finisher controller PCB.
	0002	- Shutter drive motor or finisher controller PCB failure - Shutter open detection sensor failure - Shutter clutch failure	
		- The shutter open sensor did not turn off when 1000 ms have lapsed since the shutter unit had performed close operation, resulting in incomplete close operation.	- Check the connector of the shutter open sensor. - Check the connector of the shutter clutch. - Check the connector of the shutter motor. - Replace the shutter open sensor. - Replace the shutter clutch. - Replace the shutter drive motor. - Replace the finisher controller PCB.

14.5 Fax Error Codes

14.5.1 Outline

14.5.1.1 Error Code Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

An error code is used to indicate a fault in a machine, and is indicated in the machine's LCD or reports, showing the nature (symptoms) of the fault. Using the error code, the user or the service man can readily find out how to correct the fault by simply referring to the User's Manual or service manual.
An error code may be either of the following two types:

User Error Codes
A fault indicated as a user error code is one that can easily be corrected by the user, as by operating the machine. It takes the form of "#+number."

Service Error Codes
If a fault calls for a service man for correction, it is indicated as a service man error code in the form of "##+number" or "SYSTEM ERROR E+number."

Memo
A service error code expressed in the form of "##+number" will not appear on the LCD, Error Tx Report, or Activity Report while the machine remains in factory default state. To check a service error code, shift bit 0 of service soft switch #1 SSSW SW01 to '1'.

Memo
Display only the error codes which are newly incorporated in this machine as well as which require remedies unique to the product. For the causes and countermeasures of other error codes, refer to the separate G3/G4 Facsimile Error Code List (Rev. 2).

14.5.2 User Error Code

14.5.2.1 User Error Code

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-9

No.	Tx/Rx	Description
#0001	[Tx]	an original has jammed.
#0003	[Tx/Rx]	tine-out for copying or sending/receiving a single page has occurred.
#0005	[Tx/Rx]	time-out for initial identification (T0/T1) has occurred.
#0009	[Rx]	recording paper has jammed or is absent.
#0012	[Tx]	recording paper is absent at the other party.
#0018	[Tx/Rx]	auto call initiation has failed.
#0037	[Rx]	image memory overflow at time of reception has occurred.
#0059	[Tx]	The number you dial and connected number (CSI) does not match.
#0995/0099	[Tx/Rx]	a memory communication reservation has been cancelled.

14.5.3 Service Error Code

14.5.3.1 Service Error Code

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-14-10

No.	Tx/Rx	Description
##0100	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0101	[Tx/Rx]	the modem speed does not match that of the other party.
##0102	[Tx]	at time of transmission, fall-back cannot be used.
##0103	[Rx]	at time of reception, EOL cannot be detected for 5 sec (15 sec if CBT).
##0104	[Tx]	at time of transmission, RTN or PIN is received.
##0106	[Rx]	at time of reception, the procedural signal is received for 6 sec while in wait for the signal.
##0107	[Rx]	at time of reception, the transmitting party cannot use fall-back.
##0109	[Tx]	at time of transmission, a signal other than DIS, DTC, FTT, CFR, or CRP is received, and the procedural signal has been sent more than specified.
##0111	[Tx/Rx]	memory error has occurred.
##0114	[Rx]	at time of reception, RTN is transmitted.
##0200	[Rx]	at time of reception, no image carrier is detected for 5 sec.
##0201	[Tx/Rx]	DCN is received outside the normal parity procedure.
##0220	[Tx/Rx]	system error (main program out of control) has occurred.
##0232	[Tx]	encoding error has occurred.
##0237	[Rx]	decoding error has occurred.
##0261	[Tx/Rx]	system error has occurred.

No.	Tx/Rx	Description
##0280	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0281	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0282	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0283	[Tx]	at time of transmission, the procedural signal has been transmitted more than specified.
##0284	[Tx]	at time of transmission, DCN is received after transmission of TCF.
##0285	[Tx]	at time of transmission, DCN is received after transmission of EOP.
##0286	[Tx]	at time of transmission, DCN is received after transmission of EOM.
##0287	[Tx]	at time of transmission DCN is received after transmission of MPS.
##0288	[Tx]	after transmission of EOP, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0289	[Tx]	after transmission of EOM, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0290	[Tx]	after transmission of MPS, a signal other than PIN, PIP, MCF, RTP, or RTN has been received.
##0670	[Tx]	at time of V.8 late start, the V.8 ability of DIS front the receiving party is expected to be detected, and the CI signal is expected to be transmitted in response; however, the procedure fails to advance, and the line is released because of T1 time-out.
##0671	[Rx]	at time of V.8 arrival, procedure fails to move to phase 2 after detection of CM signal from caller, causing T1 time-out and releasing line
##0672	[Tx]	at time of V.34 transmission, a shift in procedure from phase 2 to phase 3 and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0673	[Rx]	at time of V.34 reception, a shift in procedure from phase 2 to phase 3 and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0674	[Tx]	at time of V.34 transmission, a shift in procedure from phase 3 and phase 4 to the control channel and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0675	[Rx]	at time of V.34 reception, a shift in procedure from phase 3 and phase 4 to the control channel and thereafter stops, causing the machine to release the line and suffer T1 timeout.
##0750	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-NULL, causing the procedural signal to be transmitted more than specified.
##0752	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-NULL.
##0753	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-NULL, or T5 time-out (60 sec) has occurred.
##0754	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-NULL.
##0755	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-MPS, causing the procedural signal to be transmitted more than specified.
##0757	[Tx]	at time of ECM transmission, DCN is received after retransmission of PPS-MPS.
##0758	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS, or T5 time-out (60 sec) has occurred.
##0759	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS.
##0760	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-EOM, causing the procedural signal to be transmitted more than specified.
##0762	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-EOM.
##0763	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-MPS, or T5 time-out (60 sec) has occurred.
##0764	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-EOM.
##0765	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of PPS-EOP, causing the procedural signal to be transmitted more than specified.
##0767	[Tx]	at time of ECM transmission, DCN is received after transmission of PPS-EOP.
##0768	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-EOP, or T5 time-out (60 sec) has occurred.
##0769	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of PPS-EOP.
##0770	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-NULL, causing the procedural signal to be transmitted more than specified.
##0772	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-NULL.
##0773	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EOR-NULL, or T5 time-out (60 sec) has occurred.
##0774	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-NULL.
##0775	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-MPS, causing the procedural signal to be transmitted more than specified.
##0777	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-MPS.
##0778	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission EOR-MPS, or T5 time-out (60 sec) has occurred.
##0779	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-MPS.
##0780	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-EOM, causing the procedural signal to be transmitted more than specified.
##0782	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-EOM.
##0783	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EOR-EOM, or T5 time-out (60 sec) has occurred.
##0784	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-EOM.
##0785	[Tx]	at time of ECM transmission, no meaningful signal is received after transmission of EOR-EOP, causing the procedural signal to be transmitted more than specified.
##0787	[Tx]	at time of ECM transmission, DCN is received after transmission of EOR-EOP.

No.	Tx/Rx	Description
##0788	[Tx]	at time of ECM transmission, the procedural signal has been transmitted more than specified after transmission of EOR-EOP, or T5 time-out (60 sec) has occurred.
##0789	[Tx]	at time of ECM transmission, ERR is received after transmission of EOR-EOP.
##0790	[Rx]	at time of ECM reception, ERR is transmitted after transmission of EOR-Q.
##0791	[Tx/Rx]	while ECM mode procedure is under way, a signal other than a meaningful signal is received.
##0792	[Rx]	at time of ECM reception, PPS-NULL cannot be detected over partial page processing.
##0793	[Rx]	at time of ECM reception, no effective frame is received while high-speed signal reception is under way, thus causing time-out.
##0794	[Tx]	at time of ECM reception, PPR with all 0s is received.
##0795	[Tx/Rx]	a fault has occurred in code processing for communication.

Chapter 15 Service Mode

Contents

15.1 Outline

15.1.1 Outline of Service Mode

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The items that follow may be checked/set using the machine's service mode, which is designed the way the service mode used in fax machines is designed in terms of contents and operation.

The displayed menus are different by the model.

#SSSW
Use it to register/set basic fax functions (e.g., error control, echo remedy, communication error correction).
Use it to make settings related counter functions.

#MENU
Use it to register/set items related to functions needed at time of installation (e.g., NL equalizer, transmission level).

#NUMERIC PARAMETER
These setting items are for inputting numeric parameters such as the various conditions for the RTN signal transmission.

#SPECIAL
These setting items are for telephone network control functions. (Do not change the settings.)

#NCU
These setting items are for telephone network control functions such as the selection signal transmission conditions and the detection conditions, for the control signals sent from the exchange. (Do not change the settings.)

#FAX
Do not use.

#SCAN
These setting items are for image adjustment in scanning.

#PRINT
These setting items are for image adjustment in printer assembly and for special mode for the field-related measures.

#NETWORK
Use it to confirm the contents of the installed CA certificates.

#CODEC
Do not use.

#SYSTEM
These are used for the import/export of user information through USB.

#ACC
Register the accessories.

#COUNTER
Use it to check estimates for maintenance/parts replacement.

#LMS
Use it to set the inactivity of the transmitted license and the license inactivity without transmitting.

#E-RDS
This is a setting items related to e-RDS (Embedded RDS).

#REPORT
Use it to generate reports on various service data.

#DOWNLOAD
Use it to download firmware to the ROM of a PCB in question.

#CLEAR
Use it to reset various data to initial settings.

#ERROR DISPLAY

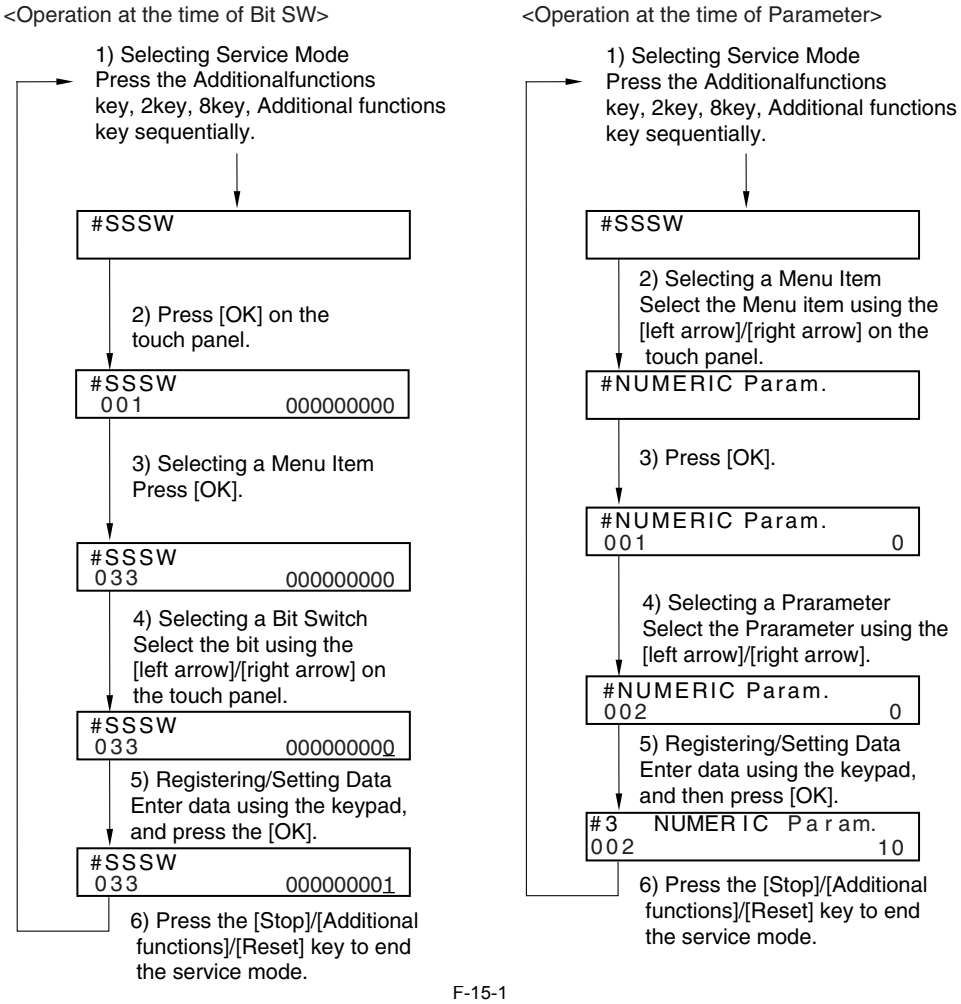
The error and detailed code which have happened now are displayed.

#ROM
Displays ROM information, such as version numbers and checksums.

#TEST MODE
Makes various status checks, such as contact sensor, sensor and print status.

15.1.2 Using the Mode (Touch Panel Type)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-15-1

15.2 Default Settings

15.2.1 Service Mode Menus

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

#SSSW		
No.	**Initial setting**	**Function**
SW01	00000000	error/copy control
SW02		not used
SW03	00000000	echo remedy setting
SW04	10000000	communication fault remedy setting
SW05	00000000	standard function (DIS signal) setting
SW06 - SW11		not used
SW12	00000010	page timer setting
SW13	00000000	meter/inch resolution setting
SW14	00000001	inch/meter resolution setting

#SSSW		
No.	**Initial setting**	**Function**
SW15 - SW24		not used
SW25	00000000	report indication resolution setting
SW26 - SW27		not used
SW28	00000000	V.8/V.34 protocol settings
SW29		not used
SW30	00000000(JPN)/ 00000011(EURO)/ 00000001(Other country/region)	Assigning a New Dial Tone Detection Method
SW31- SW32		not used
SW33	00000000	counter function settings
SW34	10000000	waste toner full display setting
SW35 - SW50		not used

#MENU			
No.	**Initial setting**	**Range of setting**	**Function**
01: - 04:			not used
05:	0	ON/OFF	NL equalizer setting
06:	0	0: DIAL 1: SERVICEMAN [1] 2: SERVICEMAN [2] 3: OFF	line monitor setting
07:	10	0-15	transmission level setting
08:	0	0: 3429 1: 3200 2: 3000 3: 2800 4: 2743 5: 2400	V.34 baud rate
09:	0	0: 33.6kbs 1: 31.2kbs 2: 28.8kbs 3: 26.4kbs 4: 24.0kbs 5: 21.6kbs 6: 19.2kbs 7: 16.8kbs 8: 14.4kbs 9: 12.0kbs 10: 9.6kbs 11: 7.2kbs 12: 4.8kbs 13: 2.4kbs	V.34 transmission speed
10:	1	0: 50Hz 1: 25Hz 2: 17Hz	pseudo CI signal frequency setting
11: - 20:			not used

#NUMERIC Param.			
No.	**Initial setting**	**Range of setting**	**Function**
001:			not used
002:	10 (10%)	(1 - 99)	RTN signal transmission condition (1) setting
003:	15 (15lines)	(2 - 9)	RTN signal transmission condition (2) setting
004:	12 (12times)	(1 - 99)	RTN signal transmission condition (3) setting
005:	4 (4sec)	(1 - 60)	NCC pause time (pre-ID code) setting
006:	4 (4sec)	(1 - 60)	NCC pause time (post-ID code) setting
007: - 009:			not used
010:	5500 (55sec)	(0 - 9999)	line connection identification time length
011:	3500 (35sec)	(0 - 9999)	T.30 T1 timer (for reception)
012:			not used
013:	1300 (13sec)	(500 - 3000)	T30 EOL timer
014:			not used
015:	120 (1200ms)	(0 - 999)	hooking detection time setting
016:	4 (4sec)	(0 - 9)	fax/tel switch-over function: between line acquisition and pseudo RBTtransmission
017:	100 (1000ms)	(0 - 999)	pseudo RBT signal pattern: ON time setting
018:	0 (0ms)	(0 - 999)	pseudo RBT signal pattern: OFF time (short) setting

#NUMERIC Param.			
No.	**Initial setting**	**Range of setting**	**Function**
019:	200 (2000ms)	(0 - 999)	pseudo RBT signal pattern: OFF time (long) setting
020:	100 (1000ms)	(0 - 999)	pseudo CI signal pattern: ON time setting
021:	0 (0ms)	(0 - 999)	pseudo CI signal pattern: OFF time (short) setting
022:	200 (2000ms)	(0 - 999)	pseudo CI signal pattern: OFF time (long) setting
023:	4	(0 - 7)	fax/tel switch-over pseudo RBT transmission level
024:	20 (-20dBm)	(0 - 20)	fax/tel switch-over pseudo RBT transmission level
025:	60 (60sec)	(0 - 999)	pseudo RBT signal pattern: OFF time (long) setting
026:			not used
027:	0	(0 - 20)	V21 low-speed flag preamble detection time length
028: - 054:			not used
055:	60 (min)	(0 - 480)	acquisition period of enviormental log data
056:	101	(0 - 999)	count type select 1
057:	103	(0 - 999)	count type select 2
058:	201	(0 - 999)	count type select 3
059:	203	(0 - 999)	count type select 4
060:	0	(0 - 999)	count type select 5
061:	0	(0 - 999)	count type select 6
062: - 080:			not used

#SPECIAL	Do not change.
#NCU	Do not change.
#FAX	Not used.

#SCAN				
	No.	**Initial setting**	**Range setting**	**Explanation**
#SCAN SW	SW1	00000000		Outputting an Image for ADF Squareness Adjsutment
	SW2 - SW50			Not used

#SCAN				
	No.	**Initial setting**	**Range setting**	**Explanation**
#SCAN NUMERIC	001: - 023:			Not used
	024:	385	300 to 450, one unit=0.1mm	CIS scan position during ADF scanning.
	026:	22	6 to 48, one unit=0.1mm	Distance from the standby position of CIS to the shading start point.
	027: - 030:			Not used
	031:	35	0 to 70, one unit=0.1mm	Vertical scan start position adjustment
	032:	115	50 to 150, one unit=0.1mm	Horizontal scan start position adjustment
	033:	16	0 to 32, one unit=0.1%	Vertical scan magnification correction
	034:			Not used
	035: - 036:	474		Reader motor speed adjustment
	037: - 040:			Not used
	041:	35	0 to 70, one unit=0.1mm	Vertical scan start position adjustment (scanning on ADF)
	042:	220	170 to 270, one unit=0.1mm	Horizontal scan start position adjustment (scanning on ADF)
	043:	24	0 to 200, one unit=0.1mm	Horizontal scan end position correction (copy)
	044:	36	0 to 200, one unit=0.1mm	Horizontal scan end position correction (superfine)
	045:	47	0 to 200, one unit=0.1mm	Horizontal scan end position correction (fine)
	046:	47	0 to 200, one unit=0.1mm	Horizontal scan end position correction (standard)
	047:	16	0 to 32, one unit=0.1%	Vertical scan magnification correction (scanning on ADF)
	048:	16	0 to 32, one unit=0.1%	Horizontal scan magnification correction (scanning on ADF)
	049: - 053:			Not used
	054:	16	0 to 32, one unit=0.1%	Pickup motor speed correction (when the ADF is used)
	055: - 192:			Not used
	193:	0	0: LEGAL 1: FOOLSCAP 2: M_OFFICIO 3: A_FOOLSCAP 4: FOLIO 5: G_LEGAL 6: A_OFFICIO 7: B_OFFICIO	ADF special paper, standardized size: LGL misidentification-ready
	194:	0	0: LTR 1: G_LTR 2: A_LTR	ADF special paper, standardized size: LTR misidentification-ready
	195:	0	0: LTR_R 1: FOOLSCAP 2: OFFICIO 3: E_OFFICIO 4: G_LTR_R 5: A_LTR_R	ADF special paper, standardized size: LTR_R misidentification-ready
	196:	272	0 to 511	shading target value (red)
	197:	272	0 to 511	shading target value (green)
	198:	272	0 to 511	shading target value (blue)
	199: - 212:			Not used
	213:	8273	1 to 9999	XYZ correction value (X) of standard white plate
	214:	8737	1 to 9999	XYZ correction value (Y) of standard white plate
	215:	9427	1 to 9999	XYZ correction value (Z) of standard white plate

#PRINT				
	No.	**Initial setting**	**Range setting**	**Explanation**
#PRINT SW	SW01 - SW04			Not used
	SW05	10000000		Horizontal scanning priority record
	SW06 - SW13			Not used
	SW14	00000000		Special mode setting
	SW15	00000000		Delivery setting
	SW16 - SW17			
	SW18			Fixing temperature adjustment resolution setting
	SW19 - SW50			Not used
#PRINT NUMERIC	01: - 30:			Not used
	31:	50	0 to 100, one unit = 0.1 mm	Top registration adjustment (manual paper feed tray)
	32:	50	0 to 100, one unit = 0.1 mm	Top registration adjustment (cassette)
	33:	50	0 to 100, one unit = 0.1 mm	Top registration adjustment (duplex unit)
	34:	100	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (manual paper feed tray)
	35:	100	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (cassette 1)
	36:	100	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (cassette 2)
	37:	100	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (cassette 3)
	38:	100	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (cassette 4)
	39:	100	0 to 200, one unit = 0.1 mm	Left-end registration adjustment (duplex unit)
	40: - 44:			Not used
	45:	16	0 to 30, 1 unit = 0.4%	Fixing film speed adjustment (manual paper feed tray)
	46:	16	0 to 30, 1 unit = 0.4%	Fixing film speed adjustment (cassette)
	47: - 52:			Not used
	53:	0	0 to 9999, one unit = 5 deg C	Adjustment of margin at leading edge of copy
	54:	0	0 to 9999, one unit = 5 deg C	Adjustment of margin at trailing edge of copy
	55:	0	0 to 9999, one unit = 5 deg C	Adjustment of margin at right edge of copy
	56:	0	0 to 9999, one unit = 5 deg C	Adjustment of margin at left edge of copy
	57:			Not used
	58:	100	85 to 115, one unit = 0.5 mm	Adjustment of the registration loop volume (Manual feed tray)
	59:	100	85 to 115, one unit = 0.5 mm	Adjustment of the registration loop volume (Cassette)
	60:	100	85 to 115, one unit = 0.5 mm	Adjustment of the registration loop volume (Optional cassette)
	61:	100	85 to 115, one unit = 0.5 mm	Adjustment of the registration loop volume (Duplex unit)
	62:	7	0 to 14, one unit = 5 deg C	Temperature adjustment UP/DOWN mode (For plain paper)
	63:	7	0 to 14, one unit = 5 deg C	Temperature adjustment UP/DOWN mode (For rough paper)
	64:	0	0 to 5	Mode for preventing the temperature rise of the end
	65:	0	0 to 3	Mode for reducing sand image
	66:	0	0 to 3	Temperature/ Humidity sensor fixed mode
	67: - 70:			Not used

#PRINT				
	No.	**Initial setting**	**Range setting**	**Explanation**
#PRINT CST	U1	0	0: G_LTR	Paper size group U1 special, standard-size paper entry
			29: A-LTR	
			31: G-LTR	
			40: 8K	
	U2	0	0: FLSP	Paper size group U2 special, standard-size paper entry
			24: FLSP	
			26: OFI	
			27: E-OFI	
			28: B-OFI	
			36: A-OFI	
			37: M-OFII	
			39: 16K	
	U3	0	0: G-LGL	Paper size group U3 special, standard-size paper entry
			25: AFLS	
			32: GLTRR	
			30: ALTRR	
			35: FORIO	
			34: G-LGL	

#SYSTEM		
	Setting	**Function**
#NETWORK SW		not used
#NET NUMERIC		not used
#CERTIFICATE	#CA-CERTIFICATE	contents confirmation of the installed CA certificate

#CODEC	Not used.

#SYSTEM				
	No.	**Initial setting**	**Range of setting**	**Function**
#SYSTEM SW	SW01- SW02			not used
	SW03	00001000		Import/export of the user information via USB
	SW04 - SW50			not used
#SYSTEM NUMERIC	001: -100:			not used

#ACC			
Item	**Initial setting**	**Range of setting**	**Function**
CARD	0	0 - 99999	Card reader installation setting
CC-SPSW	0	0 or 1	Control card I/F support setting
COIN	0	0 or 1	Coin vendor change setting
CONTROL	0	0 or 1	Pinter output control setting at the time of support of control card I/F

#COUNTER	
Item	**Function**
TOTAL	total counter
PICK_UP	pickup-related counter
FEEDER	feeder counter
JAM	jam-related counter
MISC	other counter
DRBL-1	durables counter

#LMS	
Item	**Function**
INACTIVE	Not used
ERACE	Not used

#REPORT		
	Setting	**Function**
#REPORT SW		Not used
#REPORT OUTPUT	SERVICE DATA LIST	Output of service data list
	SYSTEM DATA LIST	Output of system data list
	SYSTEM DUMP LIST	Output of system dump list
	COUNTER LIST	Output of counter list
	ERROR LOG LIST	Output of error log list
	SPEC LIST	Output of spec list
	SERVICE LABEL	Output of service label
	ERDS COM LOG LIST	Output of communication error log information related to e-RDS
	ENV. LOG LIST	Output of environmental log information
#REPORT NUMERIC		Not used

#DOWNLOAD	Download mode

#CLEAR		
Item	**Level2**	**Function**
TEL & USER DATA		Use it to clear all areas under user registration/setting.
SERVICE DATA		Use it to clear the counters (numerator), date, and start data form the system dump list.
COUNTER		Use it to clear the maintenance/parts counter data and each mode counter data.
SOFT-CNT		Not used.
TYPE		Use it to clear the user data and the service data by specified settings.
HST	ACTIVITY	Use it to clear the contents of the communications control report.
	ACCOUNT	Use it to clear each print history.
	JAM	Use it to clear the contents of the jam history.
	ERR	Use it to clear the contents of the error (E code) history.
	ALARM	Use it to clear the contents of the alarm history.
	ENVIROMENT	Initializes the enviroment log data.
CARD		Use it to clear the control cars error data.
ERR	E355	Not used.
	E719	Use it to clear the management information at the time of card reader removal.
PWD		Use it to clear the system administrator's password.
FILE SYSTEM*1		Delete unnecessary language files in the USB memory.
FORMAT*1	USB MEMORY	Format the USB memory. (This mode is used when the USB memory error is damaged and E744 occurs.)
	LICENSE DRIVE	Not used.
CA-KEY		Initializes an installed CA certification.
ERDS-DAT		The settings related to e-RDS are cleared to the factory settings.
ALL		Clears user and service data (except for some scan parameters and print parameters), and the counter setting/registration data in the system dump list, except for the print count.

#ERROR DISPLAY	Display the service error code.

#ROM	
Item	**Function**
MAIN	Use it to indicate the version of the ROM (SYSTEM) on the image processor PCB.
MAIN2	Use it to indicate the version of the ROM (BOOT) on the image processor PCB.
OPROM	Use it to indicate the version of option ROM.
ECONT	Use it to indicate the version of the ROM on the DC controller PCB.

#TEST MODE [1] - [9]	
Item	**Function**
(1) DRAM [1] - [2]	Data check in D-RAM
(2) SCAN TEST [1] - [8]	CS automatic correction and document scan position adjustment
(3) PRINT TEST [1] - [9]	Output of test prints
(4) MODEM TEST [1] - [9]	modem/NCU related tests
(5) AGING TEST	not used
(6) FACULTY TEST [1] - [9]	Various functional tests
(0) ROLLER CLEAN	Printer and ADF roller cleaning

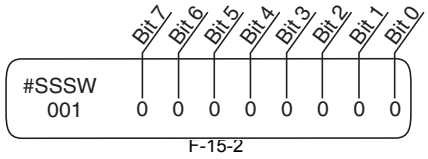
15.3 Service Soft Switch Settings (SSSW)

15.3.1 Outline

15.3.1.1 Bit Switch Composition

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The items registered and set by each of these switches comprise 8-bit switches. The figure below shows which numbers are assigned to which bits. Each bit has a value of either 0 or 1.



F-15-2

Do not change service data identified as "not used"; they are set as initial settings.

15.3.2 SSSW-SW01:

15.3.2.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-1

Bit	Function	1	0
0	service error code	output	not output
1	not used	-	-
2	not used	-	-
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

15.3.2.2 Detailed Discussions of Bit 0

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Selects whether or not service error codes are output.
When output is selected, service error codes is report.

15.3.3 SSSW-SW03

15.3.3.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-2

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	not used	-	-
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	tonal signal before CED signal transmission	transmit	do not transmit

15.3.3.2 Detailed Discussions of Bit 7

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to enable/disable transmission of a 1080-Hz tonal signal before transmission of the CED signal.
Select 'transmit' if errors occur frequently because of an echo when reception is from overseas.

Memo:
Any of the following error code may be indicated because of an echo at time of reception
##0005, ##0101, ##0106, ##0107, ##0114, ##0200, ##0201, ##0790

15.3.4 SSSW-SW04

15.3.4.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-3

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	the number of final flag sequences of protocol signals	2	1
3	Reception mode after CFR signal transmission	high speed	high speed/low speed
4	the length of the period of ignoring low speed signals after CFR output	1500 ms	700 ms
5	CI signal frequency check at the time of PBI setting	Check	Not
6	CNG signal for manual transmission	Not transmitted	Transmitted
7	CED signal for manual reception	Not transmitted	Transmitted

15.3.4.2 Detailed Discussions of Bit 2

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to select the number of last flag sequences for a protocol signal (transmission speed at 300 bps). Select '2' if the other party fails to receive the protocol signal properly.

Memo:

Any of the following error codes may be indicated at time of transmission
##0100, ##0280, ##0281, ##0750, ##0753, ##0754, ##0755, ##0758, ##0759, ##0760, ##0763 ##0764, ##0765, ##0768, ##0769,##0770, ##0773, ##0775, ##0778, ##0780, ##0783, ##0785, ##0788

15.3.4.3 Detailed Discussions of Bit 3

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to select an appropriate reception mode after transmission of the CFR signal.
If errors occur frequently at time of reception because of the condition of the line, select 'high speed' for reception mode and, at the same time, selects 'do not receive' for 'ECM reception.'

Memo:
Any of the following error codes may be indicated at time of reception because of line condition
##0107, ##0114, ##0201
Be sure to change bit 4 before changing this bit; if errors still occur, change this bit.
When 'high speed' is selected, only high-speed signals (images) will be received after transmission of the CFR signal.

15.3.4.4 Detailed Discussions of Bit 4

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to select the time length during which low-speed signals are ignored after transmission of the CFR signal.
If the condition of the line is not good and, therefore, the reception of image signals is difficult, select '1500 ms.'

15.3.4.5 Detailed Discussions of Bit 5

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

In the countries that need approval of CI signal frequency check, no checking on frequency set at PBX when changing the frequency to PSTN setting and PBX setting for frequency checks.

15.3.4.6 Detailed Discussions of Bit 6

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Selects whether or not to transmit CNG signal during manual transmission.
In manual transmitting to a fax with the FAX/TEL switching mode, if there are frequent errors due to failure to switch to fax mode, select "Transmitted" for the CNG signal.

15.3.4.7 Detailed Discussions of Bit 7

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Selects whether or not to transmit CED signals during manual reception. If the other fax does not transmit even when you start manual reception, select "Transmitted" for the CED signal.

15.3.5 SSSW-SW05

15.3.5.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-4

Bit	Function	1	0
0	not used	-	-
1	Conversion from mm to inch (text mode)	convert	do not convert
2	Conversion from mm to inch (text/photo mode)	convert	do not convert
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

15.3.5.2 Detailed Discussions of Bit 1

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to enable/disable millimeter/inch conversion in sub scanning direction for images read in text mode.
Scanning direction in conversion follows the Bit 2 setting of SW14.

15.3.5.3 Detailed Discussions of Bit 2

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to enable/disable millimeter/inch conversion in sub scanning direction for images read in text/photo mode while bit 1 is set to '1'.
Scanning direction in conversion follows the Bit 2 setting of SW14.

15.3.6 SSSW-SW12

15.3.6.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-5

Bit	Function	1	0
0	Time-out period for one page upon transmission	1	0
1	Time-out period for one page upon transmission	1	0
2	not used	-	-
3	not used	-	-
4	Time-out period for one page upon reception	1	0
5	Time-out period for one page upon reception	1	0
6	not used	-	-
7	Respective page timer settings for transmission and for reception	enable	do not enable

The machine will stop the ongoing communication if the transmission/reception of a single original page takes 32 min or more. To use the timer for a purpose other than this function, refer to the tables that follow, and select an appropriate time length.
When 'do not enable' is selected using bit 7, the time-out length for a single page for all modes will depend on the setting of bit 0 and bit 1.

T-15-6

Time-Out Length for Transmission/Reception	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	0	*	*	*	*	*	0	0
16 min	0	*	*	*	*	*	0	1
32 min	0	*	*	*	*	*	1	0
64 min	0	*	*	*	*	*	1	1

T-15-7

Time-Out Length for Transmission (in text mode)	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	1	*	*	*	*	*	0	0
16 min	1	*	*	*	*	*	0	1
32 min	1	*	*	*	*	*	1	0
64 min	1	*	*	*	*	*	1	1

T-15-8

Time-Out Length for Reception	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
8 min	1	*	0	0	*	*	*	*
16 min	1	*	0	1	*	*	*	*
32 min	1	*	1	0	*	*	*	*
64 min	1	*	1	1	*	*	*	*

15.3.7 SSSW-SW13

15.3.7.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-9

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	Convert "inch" into "mm" when transmitting the received image data	convert	do not convert
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

15.3.7.2 Detailed Discussions of Bit 2

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

It converts "inch" into "mm" when transmitting the received image data.
Scanning direction in conversion follows the Bit 2 setting of SW14.

15.3.8 SSSW-SW14

15.3.8.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-10

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	direction of scanning for inch/mm conversion	both main and sub scanning directions	sub scanning direction only
3	not used	-	-
4	inch-configuration resolution declaration	declare	do not declare
5	not used	-	-
6	not used	-	-
7	not used	-	-

15.3.8.2 Detailed Discussions of Bit 2

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to specify whether to convert or not convert an inch-configuration resolution into a millimeter-configuration resolution for image read in G3 transmission: either in sub scanning direction only or in both main and sub scanning directions. The setting is valid only when bit 1 of SW05 of #SSSW is set to '1'.

15.3.8.3 Detailed Discussions of Bit 4

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to specify whether to declare or not declare an inch-configuration resolution to the other machine for G3 communication: if 'declare' is selected, the machine will indicate that it reads and records at an inch-configuration resolution using the DIS, DCS, or DTC signal.

15.3.9 SSSW-SW25

15.3.9.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-11

Bit	Function	1	0
0	procedure of V.8 on the initiation side	receiver's number	initial call number
1	not used	-	-
2	If void CSI has been received, handle as non-received CSI.	Yes	No
3	not used	-	-
4	not used	-	-
5	not used	-	-
6	not used	-	-
7	not used	-	-

15.3.9.2 Detailed Discussions of Bit 0

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Transmitted telephone number could be selected on the report indication after the transmission.
If the "Initiation number" is selected, report will indicate the telephone number of the initiation side.
If the "Receiver's number" is selected, report will indicate the phone number (CSI signal data) which is sent by the receiver's side.

15.3.9.3 Detailed Discussions of Bit 2

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

At "1" on this Bit, ignore the void CSI if received and if the dial has been made at this point, the dialed number will be indicated on the LCD/ Report screen.
At "0" on this Bit, even though the dialed number is acknowledged, LCD/Report screen will indicate nothing.

15.3.10 SSSW-SW28

15.3.10.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-12

Bit	Function	1	0
0	Caller V.8 protocol	NO	YES
1	Called party V.8 protocol	NO	YES
2	Caller V.8 protocol late start	NO	YES
3	Called party V.8 protocol late start	NO	YES
4	V.34 reception fallback	Prohibited	Not prohibited
5	V.34 transmission fallback	Prohibited	Not prohibited
6	not used	-	-
7	not used	-	-

15.3.10.2 Detailed Discussions of Bit 0

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to use the V.8 protocol when calling. If NO is selected, the V.8 protocol is inhibited at calling and the V.21 protocol is used.

15.3.10.3 Detailed Discussions of Bit 1

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to use the V.8 protocol when called. If NO is selected, the V8 protocol is inhibited when called and the V.21 protocol is used.

15.3.10.4 Detailed Discussions of Bit 2

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If ANSam signal is not received during transmission, select whether to use the V.8 protocol when the other fax machine declares the V.8 protocol in DIS signal. If NO is selected, the CI signal is not transmitted and the V.8 protocol is not used even if the DIS that specifies the V.8 protocol is received.
The V.8 late start is not executed during manual transmission regardless of this setting.

15.3.10.5 Detailed Discussions of Bit 3

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to declare the V.8 protocol in DIS signal for reception. If NO is selected, the V.8 protocol cannot be used because it is not declared in DIS signal. The V.8 late start is not executed during manual reception regardless of this setting.

15.3.10.6 Detailed Discussions of Bit 4

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether the receiver falls back during V.34 reception. If 'Prohibit' is selected, the receiver does not fall back.

15.3.10.7 Detailed Discussions of Bit 5

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether the transmitter falls beck during V.34 transmission. If 'Prohibit' is selected, teh transmitter does not fall back.

15.3.11 SSSW-SW30

15.3.11.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-13

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	New dial tone detection method	Detect with the new method.	Detect with the existing method.
6	Not used	-	-
7	Not used	-	-

15.3.11.2 Detailed Discussions of Bit 5

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

When "Detect with the new method" is selected, tone is detected for 3.5 seconds before call origination in order to discriminate between dial tone and voice. If dial tone is detected and the time since line seizure is 3.5 seconds or longer, call origination takes place immediately. If the time since line seizure is less than 3.5 seconds, call origination takes place after waiting for 1 second. (If the time since line seizure reaches 3.5 seconds during the 1-second waiting period, call origination takes place immediately. By default, "Detect with a new method" is assigned for this SW.

15.3.12 SSSW-SW33

15.3.12.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-14

Bit	Function	1	0
0	count B4 (Print) as large size	Yes	No
1	indicate serial No. on counter check screen	Yes	No
2	count B4 (Scan) as large size	Yes	No
3	the counter display type change in Japan and USA	Yes	No
4		Yes	No
5	not used	-	-
6	not used	-	-

Bit	Function	1	0
7	not used	-	-

15.3.12.2 Detailed Discussions of Bit 0

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to specify whether B4 paper (Print) should be counted as large-size paper.
If 'yes' is selected, B4 paper will be counted as large-size paper.
If 'no' is selected, on the other hand, B4 paper will be counted as small-size paper.

15.3.12.3 Detailed Discussions of Bit 1

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to specific whether to indicate the machine serial No. on the Counter Check screen, appearing when the Counter key is pressed.
If 'yes' is selected, the serial No. will be indicated.
If 'no' is selected, on the other hand, the serial No. will not be indicated.

15.3.12.4 Detailed Discussions of Bit 2

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to specify whether B4 paper (Scan) should be counted as large-size paper.
If 'yes' is selected, B4 paper will be counted as large-size paper.
If 'no' is selected, on the other hand, B4 paper will be counted as small-size paper.

15.3.12.5 Detailed Discussions of Bit 3 - Bit4

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to switch the counter display type in effect in Japan and USA to the conventional or new type. Select "Yes" to display counters in the new type. Select "No" to display counters in the conventional type.

T-15-15

	Bit4	Bit3
Conventional type	0	0
New type 1	0	1
New type 2	1	0

15.3.13 SSSW-SW34

15.3.13.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-16

Bit	Function	1	0
0	Display the waste toner full warning	YES	NO
1	Switch the waste toner full warning	Drum replacement required message displayed on an operator call	E019 displayed on an service call
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	Not used	-	-
6	Not used	-	-
7	Not used	-	-

The default setting of this SSSW varies depending on the destination of the product.
Product for Japan: 00000000
Product for countries in Euro zone: 00000011
Products for other countries/regions: 00000001

15.3.13.2 Detailed Discussions of Bit 0

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

You can select whether a waste toner full warning is to be displayed.
When "1" is selected, a waste toner full warning is displayed.
When "0" is selected, a waste toner full warning is not displayed.

15.3.13.3 Detailed Discussions of Bit 1

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to display the waste toner full warning as a drum replacement required message or as E019 displayed on an operator call. Select 1 to display a rum replacement required message on an operator call. Select 0 to display E019 on an service call.

15.4 Menu Switch Settings (MENU)

15.4.1 Menu Switch Composition

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-17

No.	Function	Range of settings
005	NL equalizer	1: ON, 0: OFF
006	telephone line monitor	0:DIAL, 1:SERVICEMAN1, 2:SERVICEMAN2, 3:OFF
007	transmission level (ATT)	from 0 to 15 (ex: 15= -15 dBm)
008	V.34 modulation speed upper limit	0:3429, 1:3200, 2:3000, 3:2800, 4:2743, 5:2400
009	V34 data speed upper limit	0:33.6 kbps, 1:31.2 kbps, 2:28.8 kbps, 3:26.4 kbps, 4:24.0 kbps, 5:21.6 kbps, 6:19.2 kbps, 7:16.8 kbps, 8:14.4 kbps, 9:12.0 kbps, 10:9.6 kbps, 11:7.2 kbps, 12:4.8 kbps, 13:2.4 kbps
010	Frequency of pseudoring signal	0:50 Hz, 1:25 Hz, 2:17 Hz

15.4.2 <No.005 NL equalizer>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to enable-disable the NL equalizer.
If errors occur often during communication because of the condition of the line, enable (ON) the NL equalizer.

Any of the following error codes may be indicated at time of transmission because of the line condition:
##100, ##101, ##102, ##104, ##201, ##281, ##282, ##283, ##750, ##755, ##765, ##774, ##779, ##784, ##789
Any of the following error codes may be indicated at time of transmission because of the line condition:
##103, ##107, ##114, ##201, ##790, ##793

15.4.3 <No.006 telephone line monitor>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to s the telephone line monitor function:
DIAL: generate the monitor sound of the telephone line using the speaker from the start of transmission to DIS.
SERVICEMAN [1]: generate the monitor sound of the telephone line using the speaker from the start of communication to the end of it.
SERVICEMAN [2]: generate the monitor sound of the telephone line2 (Option).
OFF: do not generate the monitor sound of the telephone line using the speaker.

15.4.4 <No.007 ATT transmission level>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set the transmission level (ATT).
Raise the transmission level if errors occur frequently at time of communication because of the condition of the line. (It means close to 8)

Any of the following error codes may be indicated at time of transmission because of the line condition:
##100, ##101, ##102, ##104, ##201, ##280, ##281, ##282, ##283, ##284, ##750, ##752, ##754, ##755, ##757, ##759, ##760, ##762, ##764, ##765, ##767, ##769, ##770, ##772, ##774, ##775, ##777, ##779, ##780, ##782, ##784, ##785, ##787, ##789
Any of the following error codes may be indicated at time of reception because of the line condition:
##103, ##106, ##107, ##201, ##793

15.4.5 <No.008 V.34 modulation speed upper limit>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set an upper limit to the modulation speed (baud rate) for the V.34 primary channel.

15.4.6 <No.009 V.34 data speed upper limit>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set an upper limit to the data transmission speed for the V.34 primary channel between 2.4K and 33.6K bps in increments of 2400 bps. (0: 2.4K to 13: 33.6K bps).

15.4.7 <No.010 Frequency of the pseudo CI signal>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

You may select a frequency for the pseudo CI signal.
Some types of external telephones do not ring when the fax/tel switch-over function is ON. To sound the ring, change the pseudo CI signal.

15.5 Numeric Parameter Settings (NUMERIC Param.)

15.5.1 Numerical Parameter Composition

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-18

No.	Item	Range of settings
002	RTN transmission condition(1)	1% to 99%
003	RTN transmission condition (2)	2 to 99 item
004	RTN transmission condition (3)	1 to 99 lines
005	NCC pause time length (pre-ID code)	1 to 60 sec
006	NCC pause time length (post-ID code)	1 to 60 sec
010	line condition identification time length	0 to 9999 (10 msec)
011	T.30T1 timer (for reception)	0 to 9999 (10 msec)
013	T.30 EOL timer	500 to 3000 (10 msec)
015	hooking detection time length	0 to 999
016	time length to first response at time of fax/tel switchover	0 to 9
017	pseudo RBT signal pattern ON time length	0 to 999
018	pseudo RBT signal pattern OFF time length (short)	0 to 999
019	pseudo RBT signal pattern OFF time length (long)	0 to 999
020	pseudo CI signal pattern ON time length	0 to 999
021	pseudo CI signal pattern OFF time length (short)	0 to 999
022	pseudo CI signal pattern OFF time length (long)	0 to 999
023	CNG detection level at time of fax/tel switchover	0 to 7
024	pseudo RBT transmission level at time of fax/tel switchover	10 to 20 0 to 20 (120/230V)
025	Answering machine connection function signal detection time	0 to 999
027	preamble detection time length for V21 low-speed flag	20 (x 10ms)
055	acquisition period of environmental log data	0 to 480 (60min)
056	display the type of soft counter 1	101 (Fixed)
057	Display the type of soft counter 2	0 to 999
058	Display the type of soft counter 3	0 to 999
059	Display the type of soft counter 4	0 to 999
060	Display the type of soft counter 5	0 to 999
061	Display the type of soft counter 6	0 to 999

15.5.2 <002: RTN transmission condition (1)><003: RTN transmission condition (2)><004: RTN transmission condition (3)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set RTN signal transmission conditions. Raise these parameters for more lenient conditions if errors occur frequently at time of reception because of transmission of the RTN signal.

Memo:
Any of the following error codes may be indicated at time of reception because of RTN signal transmission
##0104, ##0107, ##0114, ##0201

RTN signal transmission condition (1) affects the ratio of error lines to the total number of lines per single page of received images.
RTN signal transmission condition (2) affects the standard value (*2) of burst errors (*1).
RTN signal condition (3) affects the number of errors not reaching the standard value of burst errors.

*1: transmission error occurring cover several lines.
*2: for instance, if '15' is set, a single burst error will represent an error occurring continuously cover 15 lines.

If any of these lines is detected while an image signal is being received, the RTN signal will be transmitted after receiving the protocol signal of the transmitting party. Higher parameters restrict the transmission of the RTN signal.

15.5.3 <005: NCC pause length (pre-ID code)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set the length of the pause automatically entered between access code and ID code when the NCC (New Common Carrier) line is used for dialing.

15.5.4 <006: NCC pause length (post-ID code)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set the length of the pause automatically entered between ID code and telephone number of the other party when the NCC (New Common Carrier) line is used for dialing.

15.5.5 <010: line connection identification length>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set the time for identifying the line connection. Raise this parameter if errors occur frequently at time of communication because of the condition of the line.

Memo:
Any of the following error codes may be indicated because of the condition of the line
##0005, ##0018
The line condition identification time is between when the dial signal is transmitted and when the line condition is cut for the transmitting party, while it is between when the DIS signal is transmitted and when the line is cut for the receiving party.

15.5.6 <011: T.30 T1 timer (for reception)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Set the T1 timer for the receiver (wait time after DIS transmission starts until a significant signal is received).

15.5.7 <013: T.30 EOL timer>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Set it so that the 1-line transmission time is longer for reception to prevent reception errors caused by a long data length per line (e.g., computer FAX).

15.5.8 <016: time length to first response at time of fax/tel switchover>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Allows setting of the time from seizing the line till pseudo RBT is sent, when the Fax/ Tel switching function is operating.

15.5.9 <017: pseudo RBT signal pattern ON time length><018: pseudo RBT signal pattern OFF time length (short)><019: pseudo

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set the pattern of the pseudo RBT signal transmitted at time of a fax/tel switchover.

15.5.10 <020: pseudo CI signal pattern ON time length><021: pseudo CI signal pattern OFF time length (short)><022: pseudo CI signal pattern OFF time length (long)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set the pseudo CI signal pattern transmitted at time of a fax/tel switchover.

15.5.11 <023: CNG detention level for fax/tel switchover>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set the CNG detention level for a fax/tel switchover.

15.5.12 <024: pseudo RBT transmission level at time of fax/tel switchover>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to set the pseudo transmission level for a fax/tel switchover.

15.5.13 <025: Answering machine connection function signal detection time>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Sets the signal detection time for the answering machine connection function operation. When the answering machine connection function is operating, if the function does not operate normally because the fax does not detect CNG signal sent from the line, raise this parameter to increase the signal detection time.

15.5.14 <027: V.21 low-speed flag preamble identification length>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to detect the time of detection after which command analysis is started after detecting V.21 low-speed command preambles continuously for a specific period of time.

15.5.15 <055: Acquisition period of environmental log data>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to change the acquisition period of environmental log data.

15.5.16 <056 - 061: Count type select >

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to confirm the count type indicated on the Counter Check screen, which appears in response to a press on the Counter key.
When '0' is selected, count type will not be indicated.
No.56: Use it to indicate the type of software counter 1 of the control panel. The type of soft counter 1 cannot be changed.
No.57: Use it to change the type of soft counter 2* of the control panel to suit the needs of the user.
No.58: Use it to change the type of soft counter 3* of the control panel to suit the needs of the user.
No.59: Use it to change the type of soft counter 4* of the control panel to suit the needs of the user.
No.60: Use it to change the type of soft counter 5* of the control panel to suit the needs of the user.
No.61: Use it to change the type of soft counter 6* of the control panel to suit the needs of the user.
*:The default type settings of soft counter is different from models.
<Soft Counter Specifications>
The soft counters are classified a follows in terms of input numbers:
100s: total
200s: copy
300s: print
400s: copy + print
500s: scan
700s: received file print
800s: report pint
900s: transmitted scan

Guide to the Table
- 1:Count sheets of all sizes by one.
- 2:Count sheets of the large size by two.
- C:full color
- Bk:black mono
- L:large size (larger than A4/LTR)
- S:small size (A4/LTR or smaller)

MEMO:
To make a change so that B4 papers (for print) will be counted as large-size, use service mode: make the following selections, and change bit 0 to '1': #SSSW>SW33.
To make a change so that B4 papers (for scan) will be counted as large-size, use service mode: make the following selections, and change bit 2 to '1': #SSSW>SW33.

Serial No. on counter check screen	Counter type	Print system															
		Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
101	Total1	1	1	1	1	1	1	1	1								
102	Total2	2	2	2	2	1	1	1	1								
103	Total (L)	1	1	1	1												
104	Total (S)					1	1	1	1								
108	Total (Bk1)	1	1	1	1	1	1	1	1								
109	Total (Bk2)	2	2	2	2	1	1	1	1								
112	Total (Bk/L)	1	1	1	1												
113	Total (Bk/S)					1	1	1	1								
114	Total1 (2-sided)									1	1	1	1	1	1	1	1
115	Total2 (2-sided)									2	2	2	2	1	1	1	1
116	L (2-sided)									1	1	1	1				
117	S (2-sided)													1	1	1	1
126	TotalA1		1	1	1		1	1	1								
127	TotalA2		2	2	2		1	1	1								
128	TotalA (L)		1	1	1												
129	TotalA (S)						1	1	1								
132	TotalA (Bk1)		1	1	1		1	1	1								
133	TotalA (Bk2)		2	2	2		1	1	1								
136	TotalA (Bk/L)		1	1	1												
137	TotalA (Bk/S)						1	1	1								
138	TotalA1 (2-sided)										1	1	1		1	1	1
139	TotalA2 (2-sided)										2	2	2		1	1	1
140	L A (2-sided)										1	1	1				
141	S A (2-sided)														1	1	1
150	TotalB1		1	1	1		1	1	1								
151	TotalB2		2	2	2		1	1	1								
152	TotalB (L)		1	1	1												
153	TotalB (S)						1	1	1								
156	TotalB (Bk1)		1	1	1		1	1	1								
157	TotalB (Bk2)		2	2	2		1	1	1								
160	TotalB (Bk/L)		1	1	1												
161	TotalB (Bk/S)						1	1	1								

Serial No. on counter check screen	Counter type	Print system															
		Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
162	TotalB1 (2-sided)										1	1	1		1	1	1
163	TotalB2 (2-sided)										2	2	2		1	1	1
164	LB (2-sided)										1	1	1				
165	SB (2-sided)														1	1	1
201	Copy(Total1)	1				1											
202	Copy(Total2)	2				1											
203	Copy(L)	1															
204	Copy(S)					1											
205	CopyA (Total1)	1				1											
206	CopyA (Total2)	2				1											
207	CopyA (L)	1															
208	CopyA (S)					1											
209	Local copy(Total1)	1				1											
210	Local copy(Total2)	2				1											
211	Local copy(L)	1															
212	Local copy(S)					1											
221	Copy(Bk1)	1				1											
222	Copy(Bk2)	2				1											
227	Copy(Bk/L)	1															
228	Copy(Bk/S)					1											
237	Copy(Bk/L/2-sided)									1							
238	Copy(Bk/S/2-sided)													1			
249	CopyA (Bk1)	1				1											
250	CopyA (Bk2)	2				1											
255	CopyA (Bk/L)	1															
256	CopyA (Bk/S)					1											
265	CopyA (Bk/L/2-sided)									1							
266	CopyA (Bk/S/2-sided)													1			
277	Local copy(Bk1)	1				1											
278	Local copy(Bk2)	2				1											
283	Local copy(Bk/L)	1															
284	Local copy(Bk/S)					1											
293	Local copy(Bk/L/2-sided)									1							
294	Local copy(Bk/S/2-sided)													1			
301	Print (Total1)		1		1		1		1								
302	Print (Total2)		2		2		1		1								
303	Print (L)		1		1												
304	Print (S)						1		1								
305	PrintA (Total1)		1		1		1		1								
306	PrintA (Total2)		2		2		1		1								
307	PrintA (L)		1		1												
308	PrintA (S)						1		1								
313	Print (Bk1)		1		1		1		1								
314	Print (Bk2)		2		2		1		1								
319	Print (Bk/L)		1		1												
320	Print (Bk/S)						1		1								
329	Print (Bk/L										1		1				
330	Print (Bk/S/2-sided)														1		1
331	PDL print (Total1)		1				1										
332	PDL print (Total2)		2				1										
333	PDL print (L)		1														
334	PDL print (S)						1										
339	PDL print (Bk1)		1				1										
340	PDL print (Bk2)		2				1										
345	PDL print (Bk/L)		1														
346	PDL print (Bk/S)						1										
355	PDL print (Bk/L/2-sided)										1						

Serial No. on counter check screen	Counter type	Print system															
		Bk 1-sided L				Bk 1-sided S				Bk 2-sided L				Bk 2-sided S			
		Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print	Local copy	PDL print	FAX print	Report print
356	PDL print (Bk/S)														1		
403	Copy+Print (Bk/L)	1	1		1												
404	Copy+Print (Bk/S)					1	1		1								
405	Copy+Print (Bk2)	2	2		2	1	1		1								
406	Copy+Print (Bk1)	1	1		1	1	1		1								
411	Copy+Print (L)	1	1		1												
412	Copy+Print (S)					1	1		1								
413	Copy+Print (2)	2	2		2	1	1		1								
414	Copy+Print (1)	1	1		1	1	1		1								
421	Copy+Print (Bk/L)									1	1		1				
422	Copy+Print (Bk/S)													1	1		1
701	Recieved print (Total1)																
702	Recieved print (Total2)																
703	Recieved print (L)																
704	Recieved print (S)																
709	Recieved print (Bk1)																
710	Recieved print (Bk2)																
715	Recieved print (Bk/L)																
716	Recieved print (Bk/S)																
725	Recieved print (Bk/L/2-sided)											1					
726	Recieved print (Bk/S/2-sided)															1	
801	Report print (Total1)																
802	Report print (Total2)																
803	Report print (L)																
804	Report print (S)																
809	Report print (Bk1)																
810	Report print (Bk2)																
815	Report print (Bk/L)																
816	Report print (Bk/S)																
825	Report print (Bk/L)												1				
826	Report print (Bk/S)																1

Serial No. on counter check screen	Counter type	Scan system															
		Bk 1-sided L							Bk 1-sided S	C 1-sided L							C 1-sided S
		Total scan	Pull scan	E-mail scan	FileShare DBscan	E-mail FileShare DB scan	FileShare DB BoxFscan	E-mail FileShare DB Box	Total scan	Total scan	Pull scan	E-mail scan	FileShare DB scan	E-mail FileShare DB scan	FileShare DB scan	E-mail FileShare DB BOX scan	Total scan
501	Scan (Total1)	1								1							
505	Bk scan (Total1)	1							1								
506	Bk scan (Total2)	2							1								
507	Bk scan (L)	1															
508	Bk scan (S)								1								
509	C scanTotal (1)									1							1
510	C scanTotal (2)									2							1
511	C scan (L)									1							
512	C scan (S)																1
915	Transmission scan total2 (C)															1	
916	Transmission scan total2 (Bk)							1									

Serial No. on counter check screen	Counter type	Scan system															
		Bk 1-sided L							Bk 1-sided S	C 1-sided L							C 1-sided S
		Total scan	Pull scan	E-mail scan	FileShare DBscan	E-mail FileShare DB scan	FileShare DB BoxF scan	E-mail FileShare DB Box	Total scan	Total scan	Pull scan	E-mail scan	FileShare DB scan	E-mail FileShare DB scan	FileShare DB scan	E-mail FileShare DB BOX scan	Total scan
917	Transmission scan total3 (C)													1			
918	Transmission scanTotal3 (Bk)					1											
921	Transmission scanTotal5 (C)												1				
922	Transmission scanTotal5 (Bk)				1												
929	Transmission scanTotal6 (C)														1		
930	Transmission scanTotal6 (Bk)						1										
939	Remote scan (C)										1						
940	Remote scan (Bk)		1														
945	Transmission scan/E-mail (C)																
946	Transmission scan/E-mail (Bk)											1					

15.6 Scanner Function Settings (SCANNER)

15.6.1 Setting of Bit Switch

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

<SCAN SW SSSW01>

T-15-19

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	Not used	-	-
4	Outputting an Image for ADF Perpendicularity Adjsutment	output	not output
5	Not used	-	-
6	Not used	-	-
7	Not used	-	-

Specify whether to output an image for ADF perpendicularity adjustment.

15.6.2 Numeric Parameter Functional configuration

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

No.	Function	Default	Setting range	Unit
001: - 023:	Not used			
024:	CIS scan position during ADF scanning.	385	300-450	one unit=0.1mm
025:	Not used			
026:	Distance from the standby position of CIS to the shading start point.	22	6-48	one unit=0.1mm
027: - 030:	Not used			

No.	Function	Default	Setting range	Unit
031:	Vertical scan start position adjustment	35	0-70	one unit=0.1mm
032:	Horizontal scan start position adjustment	115	50-150	one unit=0.1mm
033:	Vertical scan magnification correction	16	0-32	one unit=0.1%
034:	Not used			
035: - 036:	Reader motor speed adjustment	474		
037: - 040:	Not used			
041:	Vertical scan start position adjustment (scanning on ADF)	35	0-70	one unit=0.1mm
042:	Horizontal scan start position adjustment (scanning on ADF)	220	170-270	one unit=0.1mm
043:	Horizontal scan end position correction (copy:scanning on ADF)	24	0-200	one unit=0.1mm
044:	Horizontal scan end position correction (superfine:scanning on ADF)	36	0-200	one unit=0.1mm
045:	Horizontal scan end position correction (fine:scanning on ADF)	47	0-200	one unit=0.1mm
046:	Horizontal scan end position correction (standard:scanning on ADF)	47	0-200	one unit=0.1mm
047:	Vertical scan magnification correction (scanning on ADF)	16	0-32	one unit=0.1%
048:	Horizontal scan magnification correction (scanning on ADF)	16	0-32	one unit=0.1%
049: - 053:	Not used			
054:	Pickup motor speed correction (when the ADF is used)	16	0-32	one unit=0.1%
055: - 192:	Not used			
193:	ADF special paper, standardized size: LGL misidentification-ready	0	0 : LEGAL 1 : FOOLSCAP 2 : M_OFFICIO 3 : A_FOOLSCAP 4 : FOLIO 5 : G_LEGAL 6 : A_OFFICIO 7 : B_OFFICIO	
194:	ADF special paper, standardized size: LTR misidentification-ready	0	0 : LTR 1 : G_LTR 2 : A_LTR	
195:	ADF special paper, standardized size: LTR_R misidentification-ready	0	0 : LTR_R 1 : FOOLSCAP 2 : OFFICIO 3 : E_OFFICIO 4 : G_LTR_R 5 : A_LTR_R	
196:	shading target value (red)	272	0-511	

No.	Function	Default	Setting range	Unit
197:	shading target value (green)	272	0-511	
198:	shading target value (blue)	272	0-511	
199: - 212:	Not used			
213:	XYZ correction value (X) of standard white plate	8273	1-9999	
214:	XYZ correction value (Y) of standard white plate	8737	1-9999	
215:	XYZ correction value (Z) of standard white plate	9427	1-9999	
216: - 350:	Not used			

⚠If any operation error occurs after changing the setting value, change the setting value to the original one.

15.6.3 <024:CIS scan position during ADF scanning>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This value is used when automatic scan position adjustment (TESTMODE>"2"SCAN TEST>"3"SHEET POS ADJ) fails.

15.6.4 <026:Distance from the standby position of CIS to the shading start point>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

White shading can be adjusted finely.

⚠Normally, do not change the setting value. If any operation error occurs after changing the setting value, change the setting value to the original one.

15.6.5 <031Vertical scan start position adjustment>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the position at which vertical scanning of a book starts. The larger the adjustment value, the narrower the left-side margin of the image becomes.

15.6.6 <032Horizontal scan start position adjustment>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the position at which horizontal scanning of a book starts. The larger the adjustment value, the narrower the top margin in the image becomes.

15.6.7 <033Vertical scan magnification correction>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Correct the magnification of vertical scanning of a book. The larger the adjustment value, the more the image stretches in the vertical scanning direction.

15.6.8 <035: - 036:Reader motor speed change>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Though no market adjustment work needs to be carried out, enter factory defaults at image processor PCB replacement.

15.6.9 <041: Vertical scan start position adjustment (when scanning on a document fed from ADF)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the position at which vertical scanning of a document fed from the ADF starts. The larger the adjustment value, the narrower the left-side margin of the image becomes.

15.6.10 <042: Horizontal scan start position adjustment (when scanning on a document fed from ADF)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the position at which horizontal scanning of a document fed from the ADF starts. The larger the adjustment value, the narrower the top margin of the image becomes.

15.6.11 <043: Horizontal scan end position correction ((copy:scanning on ADF)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the position at which horizontal scanning of a document being copied ends (when scanning on a document fed from ADF). The larger the adjustment value, the narrower the bottom margin of the image becomes.

15.6.12 <044: Horizontal scan end position correction (superfine:scanning on ADF)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the position at which horizontal scanning of a FAX document scanned in superfine mode ends. The larger the adjustment value, the narrower the bottom margin of the image becomes.

15.6.13 <045: Horizontal scan end position correction (fine:scanning on ADF)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the position at which horizontal scanning of a FAX document scanned in fine mode ends. The larger the adjustment value, the narrower the bottom margin of the image becomes.

15.6.14 <046: Horizontal scan end position correction (standard:scanning on ADF)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the position at which horizontal scanning of a FAX document set to the standard scan resolution ends. The larger the adjustment value, the narrower the bottom margin of the image becomes.

15.6.15 <047: Vertical scan magnification correction (when scanning on a document fed from ADF)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Correct the magnification of vertical scanning of a document fed from the ADF. The larger the adjustment value, the more the image stretches in the vertical scanning direction.

15.6.16 <048: Horizontal scan magnification correction (when scanning on a document fed from ADF)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Correct the magnification of horizontal scanning of a document fed from the ADF. The smaller the adjustment value, the more the image stretches in the horizontal scanning direction.
This menu is used to adjust the ADF feed motor speed. If you changed the adjustment value in this mode, the adjustment value selected for SCAN NUMERIC>54 must also be incremented/decremented by the same amount.

⚠Do not change the adjustment value extremely.

15.6.17 <193: ADF special standard-sized paper: LGL misidentification-ready>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Set to use special standard-sized paper that is not otherwise identifiable to the ADF (because it is misidentified as "LEGAL").
0: LEGAL
1: FOOLSCAP
2: M_OFFICIO
3: A_FOOLSCAP
4: FOLIO
5: G_LEGAL
6: A_OFFICIO
7: B_OFFICIO

15.6.18 <194: ADF special standard-sized paper: LTR misidentification-ready>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Set to use special standard-sized paper that is not otherwise identifiable to the ADF (because it is misidentified as "LTR").
0: LTR
1: G_LTR
2: A_LTR

15.6.19 <195: ADF special standard-sized paper: LTR_R misidentification-ready>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Set to use special standard-sized paper that is not otherwise identifiable to the ADF (because it is misidentified as "LTRR").
0: LTR_R
1: FOOLSCAP
2: OFFICIO
3: E_OFFICIO
4: G_LTR_R
5: A_LTR_R

15.6.20 <196: Shading Target Value (Red)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This is market-related measures taken to improve shadow images generated by a thick original such as a book or a folded or wrinkled original. When taking the measures, assign the same values for R, G, and B. After changing the values, be sure to turn off the power and turn it on again.

15.6.21 <197: Shading Target Value (Green)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This is market-related measures taken to improve shadow images generated by a thick original such as a book or a folded or wrinkled original. When taking the measures, assign the same values for R, G, and B. After changing the values, be sure to turn off the power and turn it on again.

15.6.22 <198: Shading Target Value (Blue)>

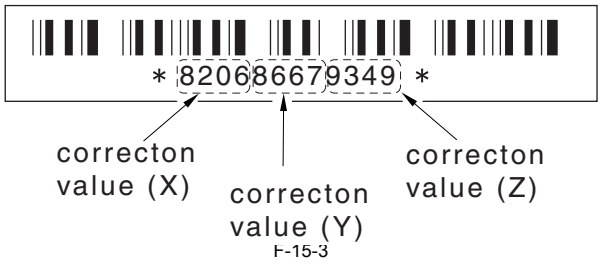
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This is market-related measures taken to improve shadow images generated by a thick original such as a book or a folded or wrinkled original. When taking the measures, assign the same values for R, G, and B. After changing the values, be sure to turn off the power and turn it on again.

15.6.23 <213: XYZ correction value (X) of standard white plate> (if equipped with SEND functions))

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If you replaced the image processor PCB, enter values indicated on the service label. If you have replaced the document glass, enter values indicated on the new document glass and write the values on the service label.

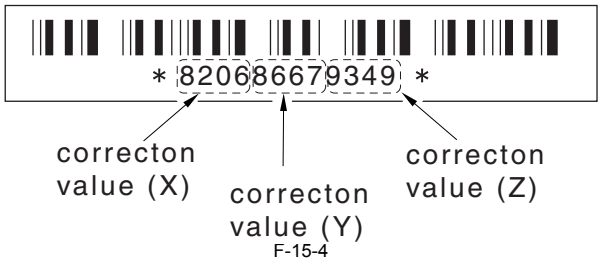


F-15-3

15.6.24 <214: XYZ correction value (Y) of standard white plate> (if equipped with SEND functions)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If you replaced the image processor PCB, enter values indicated on the service label. If you have replaced the document glass, enter values indicated on the new document glass and write the values on the service label.

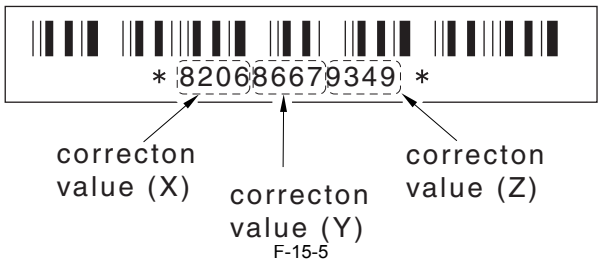


F-15-4

15.6.25 <215: XYZ correction value (Z) of standard white plate> (if equipped with SEND functions)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If you replaced the image processor PCB, enter values indicated on the service label. If you have replaced the document glass, enter values indicated on the new document glass and write the values on the service label.



F-15-5

15.7 Printer Function Settings (PRINTER)

15.7.1 Service Soft Switch Settings (SSSW)

15.7.1.1 SSSW-SW05

15.7.1.1.1 List of Functions

0018-0282

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-20

Bit	Function	1	0
0	not used	-	-
1	not used	-	-
2	not used	-	-
3	not used	-	-
4	not used	-	-

Bit	Function	1	0
5	not used	-	-
6	not used	-	-
7	priority on recording in sub scanning direction	place	do not place

15.7.1.1.2 Detailed Discussions of Bit 7

0018-0283

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to enable/disable placement of priority on recording in sub scanning direction.

T-15-21

place:	if B4 recording paper and A4 recording paper are set and an A4 extra-long image (*) is received, printing will be on the B4 recording paper.
do not place:	if B5 horizontal recording paper and A4 recording paper are set and a B4 image is received, printing will be by division and on B5 horizontal recording paper.

*: Image B4 or shorter and that cannot be printed by division and on A4 recording paper.

15.7.1.2 SSSW-SW14

15.7.1.2.1 List of Functions

0018-0285

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-22

Bit	Function	1	0
0	Transfer bias pressure reduction mode	Enable	Disable
1	Developing assembly idling mode	Enable	Disable
2	Black belt addition mode	Enable	Disable
3	Post-rotation reduction mode	Enable	Disable
4	Flicker reduction mode	Enable	Disable
5	Silent mode	Enable	Disable
6	Terminal temperature rise noise reduction mode	Enable	Disable
7	Not used	-	-

15.7.1.2.2 Detailed Discussions of Bit 0

0018-0286

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to enable or disable transfer bias pressure reduction mode.
Select "Enable" to avoid image defects (black spots) produced by transfer bias leaks occurring in a low-pressure region, such as one at a high altitude. This setting regulates the transfer bias to keep it from exceeding a predetermined level during printing.

15.7.1.2.3 Detailed Discussions of Bit 1

0018-0287

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to enable or disable developing assembly idling mode. Select "Enable" to drive the main motor for a specified period of time to apply idling and developing bias (AC + DC) to prevent the thinning of the image density when the unit is installed or the developing unit is replaced in a low-temperature, low-humidity region. This mode works only on a new developing assembly and before a toner cartridge is loaded.

15.7.1.2.4 Detailed Discussions of Bit 2

0018-0288

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to enable or disable black belt addition mode. If the user uses paper that causes fixed toner on paper to be fused and adhered to drum, selecting "Yes" will clean the drum by forming a black band on the drum surface during the reverse rotation which is performed after printing on 50 sheets.

⚠Implementation of this mode could result in a drum life falling short of its life expectancy.

15.7.1.2.5 Detailed Discussions of Bit 3

0018-0289

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to enable or disable post-rotation reduction mode. Selecting "Enable" will reduce the noise caused by the polygon motor by stopping the motor immediately after post-rotation.

15.7.1.2.6 Detailed Discussions of Bit 4

0018-0290

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to enable or disable flicker reduction mode. Select "Enable" and enter a count to modify fusing temperature control to cancel fluorescent flicking during printing.

⚠Implementation of this mode would degrade the throughput.

15.7.1.2.7 Detailed Discussions of Bit 5

0018-0291

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to enable or disable silent mode. Select "Enable" to modify the registration loop amount and thus reduce noises or squeaks the registration rollers produce after picking paper from the individual paper inlets.

15.7.1.2.8 Detailed Discussions of Bit 6

0018-0292

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to enable or disable noise reduction mode during terminal temperature rises. Select "Enable" to start slowdown at a temperature lower than normal when printing on smaller-sized paper than B4. Slowdown control thus enabled prevents the thermal degradation of the fusing film grease, assuring smooth sliding among the fixing film, heater and film guide to cut squeaks.

15.7.1.3 SSSW-SW15

15.7.1.3.1 List of Functions

0018-0293

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-23

Bit	Function	1	0
0	Inhibit automatic delivery tray replacement while running jobs	Enable	Disable
1	Halt stapling job when out of staples	Enable	Disable
2	Inhibit tray full indication while the stapled document count is exceeded	Enable	Disable
3	IFAX Permission of split recording of text data	Enable	Disable
4	Not used	-	-
5	Not used	-	-
6	Not used	-	-
7	Not used	-	-

15.7.1.3.2 Detailed Discussions of Bit 0

0018-0294

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to inhibit automatic delivery tray replacement while running jobs with an inner two-way tray mounted in position. Select "Enable" to inhibit automatic tray replacement.

15.7.1.3.3 Detailed Discussions of Bit 1

0018-0295

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to halt stapling job when a finisher installed has run out of staples. Select "Enable" to halt staple jobs when the finisher has run out of staples.

15.7.1.3.4 Detailed Discussions of Bit 2

0018-0296

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether to display a tray full message when the maximum allowable stapled document count is exceeded with a finisher installed. Select "Enable" not to display the message.

15.7.1.3.5 Detailed Discussions of Bit 3

0018-0297

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Select whether split recording is to be enabled when text data such as a header and body text is recorded. Selecting "Set" may split text data when a small paper size such as A5 is selected. In this case, a page may be split in the middle of a character string.

15.7.1.4 SSSW-SW18

15.7.1.4.1 List of Functions

0018-0298

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-15-24

Bit	Function	1	0
0	Limit temperature of temperature adjustment	Enable	Disable
1	Shift of the temperature adjustment when at auto duplex	Enable	Disable
2	Thin post card mode	Enable	Disable
3	Not used	-	-
4	Not used	-	-
5	Not used	-	-
6	Not used	-	-
7	Not used	-	-

15.7.1.4.2 Detailed Discussions of Bit 0

0018-0299

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If there is no progress after shifting the target figure of the temperature adjustment using "Temperature Adjustment UP/DOWN Mode", # PRINTER> Numeric> Parameter 62, 63, cancel the inner limit of the fixed temperature adjustment.
To cancel the inner limit of the fixed temperature adjustment, select "Setting".

15.7.1.4.3 Detailed Discussions of Bit 1

0018-0300

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If there is no progress after shifting the target figure of the temperature adjustment using "Temperature Adjustment UP/DOWN Mode", # PRINTER> Numeric> Parameter 62, 63, cancel the 2nd face of the duplex inner limit of the fixed temperature adjustment.
Select "Setting" to cancel the 2nd face of the duplex inner limit of the fixed temperature adjustment.

15.7.1.4.4 Detailed Discussions of Bit 2

0018-0301

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

When selecting the post cards, besides the 'Reply post card', 'Post card', and the 'Four face post card', 'Thin post card' could be selected. Select 'Setting' and 'Thin post card' would be selected.

15.7.2 Numeric Parameter Settings (NUMERIC Param.)

15.7.2.1 List of Functions

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

No.	Function	Default	Setting range
01: - 30:	Not used		
31:	Top registration adjustment (manual feed tray)	50	0 to 100, one unit = 0.1 mm
32:	Top registration adjustment (cassette)	50	0 to 100, one unit = 0.1 mm
33:	Top registration adjustment (duplex unit)	50	0 to 200, one unit = 0.1 mm

No.	Function	Default	Setting range
34:	Left-end registration adjustment (manual feed tray)	100	0 to 200, one unit = 0.1 mm
35:	Left-end registration adjustment (cassette 1)	100	0 to 200, one unit = 0.1 mm
36:	Left-end registration adjustment (cassette 2)	100	0 to 200, one unit = 0.1 mm
37:	Left-end registration adjustment (cassette 3)	100	0 to 200, one unit = 0.1 mm
38:	Left-end registration adjustment (cassette 4)	100	0 to 200, one unit = 0.1 mm
39:	Left-end registration adjustment (duplex unit)	100	0 to 200, one unit = 0.1 mm
40:	Target fixing temperature adjustment (multi)	6	-30 to 0, one unit = 5 deg C
41:	Target fixing temperature adjustment (cassette 1)	6	-30 to 0, one unit = 5 deg C
42:	Target fixing temperature adjustment (cassette 2)	6	-30 to 0, one unit = 5 deg C
43:	Target fixing temperature adjustment (cassette 3)	6	-30 to 0, one unit = 5 deg C
44:	Target fixing temperature adjustment (cassette 4)	6	-30 to 0, one unit = 5 deg C
45:	Fixing film speed change (manual feed tray)	16	0 to 30, 1 unit = 0.4%
46:	Fixing film speed change (cassette)	16	0 to 30, 1 unit = 0.4%
47: - 52:	Not used		
53:	Adjustment of margin at leading edge of copy	0	0 to 9999, one unit = 0.1 mm
54:	Adjustment of margin at trailing edge of copy	0	0 to 9999, one unit = 0.1 mm
55:	Adjustment of margin at right edge of copy	0	0 to 9999, one unit = 0.1 mm
56:	Adjustment of margin at left edge of copy	0	0 to 9999, one unit = 0.1 mm
57:	Not used		
58:	Adjustment of the registration loop volume (Manual tray)	100	85 to 115, one unit = 0.5 mm
59:	Adjustment of the registration loop volume (Cassette)	100	85 to 115, one unit = 0.5 mm
60:	Adjustment of the registration loop volume (Optional cassette)	100	85 to 115, one unit = 0.5 mm
61:	Adjustment of the registration loop volume (Duplex unit)	100	85 to 115, one unit = 0.5 mm
62:	Temperature adjustment UP/DOWN mode (For normal paper)	7	0 to 14, one unit = 5 deg C
63:	Temperature adjustment UP/DOWN mode. (For thick paper)	7	0 to 14, one unit = 5 deg C
64:	Mode for preventing the end temperature rise	0	0 to 5
65:	Mode for reducing sand image	0	0 to 3
66:	Temperature/ Humidity sensor fixed mode	0	0 to 3
67: - 70:	Not used		

15.7.2.2 <031: Top registration adjustment (manual feed tray)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the top registration margin of paper picked from a manual feed tray. The larger the adjustment value, the wider the top margin of the image becomes.

15.7.2.3 <032: Top registration adjustment (cassette)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the top registration margin of paper picked from cassettes. The larger the adjustment value, the wider the top margin of the image becomes.

15.7.2.4 <033: Top registration adjustment (duplex unit)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the top registration margin of paper picked from a duplex unit. The larger the adjustment value, the wider the top margin of the image becomes.

15.7.2.5 <034: Left-end registration adjustment (manual feed tray)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the left-end registration margin of paper picked from a manual feed tray. The larger the adjustment value, the wider the left-end margin of the image becomes.

15.7.2.6 <035: Left-end registration adjustment (cassette 1)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the left-end registration margin of paper picked from cassette 1. The larger the adjustment value, the wider the left-end margin of the image becomes.

15.7.2.7 <036: Left-end registration adjustment (cassette 2)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the left-end registration margin of paper picked from cassette 2. The larger the adjustment value, the wider the left-end margin of the image becomes.

15.7.2.8 <037: Left-end registration adjustment (cassette 3)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the left-end registration margin of paper picked from cassette 3. The larger the adjustment value, the wider the left-end margin of the image becomes.

15.7.2.9 <038: Left-end registration adjustment (cassette 4)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the left-end registration margin of paper picked from cassette 4. The larger the adjustment value, the wider the left-end margin of the image becomes.

15.7.2.10 <039: Left-end registration adjustment (duplex unit)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the left-end registration margin of paper picked from a duplex unit. The larger the adjustment value, the wider the left-end margin of the image becomes.

15.7.2.11 <040: Target fixing temperature adjustment (manual feed tray)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Lower the fixing temperature from the target temperature setting to reduce the chances of fixing offsets and curled or stuck delivered sheets occurring with paper picked from a manual feed tray.

15.7.2.12 <045: Fixing film speed change (manual feed tray)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Change the fixing film speed to reduce the chances of streaks appearing in the trailing edge of images caused by shocks from the fixing roller out of position while picking paper from a manual feed tray.

15.7.2.13 <046: Fixing film speed change (cassette)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Change the fixing film speed to reduce the chances of streaks appearing in the trailing edge of images caused by shocks from the fixing roller out of position while picking paper from a cassette.

15.7.2.14 <053: Margin adjustment at the leading edge of the copy>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the margin at the leading edge of the copy. Increasing the value makes the margin at the leading edge larger.

15.7.2.15 <054: Margin adjustment at the trailing edge of the copy>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the margin at the trailing edge of the copy. Increasing the value makes the margin at the trailing edge larger.

15.7.2.16 <055: Margin adjustment at the right edge of the copy>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the margin at the right edge of the copy. Increasing the value makes the margin at the right edge larger.

15.7.2.17 <056: Margin adjustment at the left edge of the copy>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Adjust the margin at the left edge of the copy. Increasing the value makes the margin at the left edge larger.

15.7.2.18 <058:: Adjustment of the registration loop volume (Manual feed tray)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If there is a registration loop noise and abrasion while feeding the paper from the manual feed tray, registration loop noise and abrasion could be reduced by adjusting the volume of the registration loop. By making the value larger, loop volume will become bigger.

15.7.2.19 <059:Adjustment of the registration loop volume. (Cassette)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If there is a registration loop noise and abrasion while feeding the paper from the cassette, registration loop noise and abrasion could be reduced by adjusting the volume of the registration loop. By making the value larger, loop volume will become bigger.

15.7.2.20 <060:Adjustment of the registration loop volume (Option cassette)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If there is a registration loop noise and abrasion while feeding the paper from the option cassette, registration loop noise and abrasion could be reduced by adjusting the volume of the registration loop. By making the value larger, loop volume will become bigger.

15.7.2.21 <061:Adjustment of the registration loop volume. (Duplex unit)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

If there is a registration loop noise and abrasion while feeding the paper from the duplex unit, registration loop noise and abrasion could be reduced by adjusting the volume of the registration loop. By making the value larger, loop volume will become bigger.

15.7.2.22 <062:Temperature adjustment UP/DOWN mode. (For plain paper)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

For plain paper relation, the volume of the temperature adjustment offset could be changed by 5 deg C at a time to aim the fixed temperature.
For plain paper relation : Normal, Normal Lo, rough paper Lo, thin post card, and OHP mode.
0 to 6: -35 to -5 deg C (1unit=5deg C)

7: 0 deg C
8 to 14: +5 to +35 deg C (1unit=5deg C)

15.7.2.23 <063:Temperature adjustment UP/DOWN mode. (For rough paper)>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

For rough paper relation, the volume of the temperature adjustment offset could be changed by 5 deg C at a time to aim the fixed temperature.
For rough paper relation: rough paper, super rough paper, super rough paper H, post card, post card H, and envelope mode.
0 to 6: -35 to -5 deg C (1unit=5deg C)
7: 0 deg C
8 to 14: +5 to +35 deg C (1unit=5deg C)

15.7.2.24 <064:Mode for preventing the temperature rise of the end >

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Set when the fixed film squeaks. Lower the target fixing temperatue and extend sheet-to-sheet time except A4/A3/11X17/LTR size.
0: Normal
1 to 5: Mode for responding film squeak. (reference to the table below)

T-15-25

Setting	Print temperature control	Sheet-to-sheet temperature control	Sheet-to-sheet time
1	Target temperature-10 deg C	Print temperature control -20 deg C	0 sec extension
2	Target temperature-20 deg C	Print temperature control -20 deg C	0 sec extension
3	Target temperature-10 deg C	Print temperature control -20 deg C	10 sec extension
4	Target temperature-20 deg C	Print temperature control -20 deg C	10 sec extension
5	Target temperature-30 deg C	Print temperature control -20 deg C	15 sec extension

15.7.2.25 <065:Mode for reducing sand image>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Set when sand image *1 has occurred on the print image.
Restraining the scatter of the toner by increasing the electric current of the AC electrification; the sand image could be reduced.
Sand image *1: Multiple black dots and white dots appear on half tone. Or multiple black dots appear on white background.
0: Normal.
1 to 3: Reducing mode. (Same operation to set 1 to 3)

There is a possibility that when using the "Reducing mode", the life of the drum will not meet the specified pieces.

15.7.2.26 <066:Temperature/ Humidity sensor fixed mode>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Changing to high-pressure environment by using the temperature/ humidity sensor. But when there is an image trouble at the point of changing the environment, fix the temperature and the humidity and do not allow the change of the high-pressure output.
0: Normal
1: Fixed environment of LL. (Temperature of 10 deg C and humidity of 10%)
2. Fixed environment of NN. (Temperature of 20 deg C and humidity of 50%)
3. Fixed environment of HH. (Temperature of 30 deg C and humidity of 80%)

15.7.3 Setting of Cassette (CST)

15.7.3.1 Special Standard-sized Paper Compatibility

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

With a special paper compatibility kit (cassette size adjuster) installed, set the cassette paper size lever to paper size groups U1 to U3 to set the paper sizes listed below.

Paper size group	Setting (*default)	Paper name	Marking
U1	0*	Government LETTER	G-LTR
	29	Argentine LETTER	A-LTR
	31	Government LETTER	G-LTR
	40	8K	8K
U2	0*	FOOLSCAP	FLSP
	24	FOOLSCAP	FLSP
	26	OFFICIO	OFI
	27	Ecuadorian OFFICIO	E-OFI
	28	Bolivian OFFICIO	B-OFI
	36	Argentine Offico	A-OFI
	37	Mexican OFFICIO	M-OFI
	39	16K	16K

Paper size group	Setting (*default)	Paper name	Marking
U3	0*	Government LEGAL	G-LGL
	25	Australian FOOLSCAP	AFLS
	30	Argentine LETTERR	ALTRR
	32	Government LETTERR	FLTRR
	34	Government LEGAL	G-LGL
	35	FORIO	FORIO

15.8 Network Parameter Settings (NETWORK)

15.8.1 Confirmation of contents of CA certificate

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Selecting the service mode "#NETWORK>#CERTIFICATE>#CA-CERTIFICATE" enables confirmation of the contents of the installed CA certificate.

15.9 Setting of System Functions (SYSTEM)

15.9.1 Bit Switch Settings

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

SSSW-SW03 functional configuration

T-15-26

Bit	Function	1	0
0	Not used	-	-
1	Not used	-	-
2	Not used	-	-
3	Not used	-	-
4	Not used	-	-
5	Not used	-	-
6	Imports and exports user information via USB.	Enable	Disable
7	Not used	-	-

Bit 6 details
Select whether to enable the host machine to work as a USB storage device or not. If the host machine is plugged into a PC with this setting enabled, it allows user registration data (user data and telephone registration data) to be imported and exported to and from the PC, except for the data embedded in the department management information and user management IDs in the system management information.

15.10 Registration of Accessories (ACC)

15.10.1 Accessory Registration

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The table below gives summary description of the accessories available.

Item		Explanation
#ACC	CARD	Card reader installation setting Enter a card number to use. (0 to 9999. One hundred cards are registered with the department ID beginning from the input card number in sequence.) *1:1,000 cards if option ROM is mounted. When a card number is entered, the following kinds of management information are initialized: - Card name (department ID), beginning from the input card number. - Password associated with the card
	CC-SPSW	Control card I/F support setting Set whether to support the control card I/F (CC-V) or not. 0: Do not support. 1: Support.
	COIN	Coin vendor change Set the control card set display appearing on the operator station for vendor use. 0: Control card use 1: Coin vendor use
	CONTROL	Set the PDL printer output control where the control card I/F (CC-V) is supported. 0: Enable printing without a card mounted. 1: Enable printing with a card mounted in position.

15.11 License Management (LMS)

15.11.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

LMS (License Management Service)
License Management System is to acquire a figure row from sending the information of the license certificate number, which is in the same package as option product, machine serial number and the name of the main machine to the server that has a license issue function on the Internet.
Option function will be able to be used by inputting the acquired figures from the main machine operation board through license registration screen in the users mode.
License option function is implemented on all the main system of the products, which is shipped from the factory, but it would not activate unless input operation has been made through the license registration screen.
Acquisition of the license key and registration of the device is basically done by the user. Detailed procedure is described in the users guide. However, as for reference, summary of the procedure is mentioned below.

(1) Access to LMS from the below URL and follow the direction on the screen to acquire the license key.
URL for LMS
http://www.canon.com/lms/license/

MEMO:
To acquire the license key, 16 digit figures on the license access number certificate and the device serial number (for example: ABC01234), which the license is going to be installed is necessary.
Device serial number will indicate on "Serial Number" when pressing the counter confirmation key on the main machine.

(2) Copy the license key of 24 digit figures, which is indicated on the WEB browser to the designated column on license access number certificate.

Reconfirm that there is no miss-copy of the 24 digit figures. Explain to the user that license access number certificate should be kept with care.

(3) Input the copy of the license key from; user mode > system management setting> license registration and press enter. The license key will be registered and function will activate.
If the function do not activate, error message will indicate. Confirm the points below due to contents of the error message.

"Value of the license key is incorrect. Confirm license key"
>> Using the license key, which was issued to another device?
>> Incorrect license key was input?
>> Proper license key used?
"This function is already active"
>> Isn't the relevant kit already active?

(4) Switch off the main power supply and after 10 seconds switch on the power supply again.

(5) Registered license will be active when after the power supply of the main device switch has been cut off once and put on again. Once the license starts properly, press counter confirmation key then press device configuration and confirm that in the option column that the relevant kit has been indicated.

15.11.2 Method of confirming license option

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Confirmation could be made whether the license option is active or not in the SOFT-ID PRM item by outputting the SPEC REPORT from the service mode.
Output method:
Select '# REPORT' from service mode.
Select '# REPORT OUTPUT'.
Select '# REPORT OUTPUT SPEC LIST' and press 'OK'.

Check the SOFT-ID RPM column from the SPEC REPORT output. License is active on the items which indicates 'ON/ON'.
Related items:
BIT 00: BDL-IMAGE(1200) -> CARPS2
BIT 05: BW-SEND -> SEND
BIT 06: CL-SEND -> SEND
BIT 09: BDL-IMAGE(600) -> CARPS2

15.11.3 Inactivity of the transmitted license

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

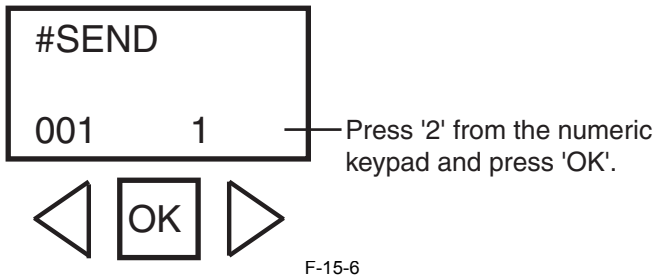
Inactivity of the transmitted license

Situation of using this service mode
This service mode is to be used exceptionally on the assumption that when malfunction occurs on the device (caused by device) and the license to be transferred to the substitute device and to inactivate the license.
This operation is called ' Inactivity of the transmitted license'. Transmission could be selected to the same device and could be used to cease the function temporary. But if the license is made inactive by mistake, it is necessary to call the dealer to reactivate.

Take utmost precaution when inactivating the license
To inactive the license, operation through the service mode has to be made and to prove the function is inactive; issue of the function inactive certificate key is necessary.
This operation is valid to any of the each optional function and at the point of issuing the function inactive certificate key the function will be inactive and could not be used.
New license key to install to the transmitted device will be issued when the information of function inactive certificate key, serial number of the transmission origin device, serial number of new destination of transmitting device and the reason for transmitting is given to the dealer. Take a note of the new license key and after the registration to the new transmitted device, inform the user that the new license key should be kept with care.

Operation procedures

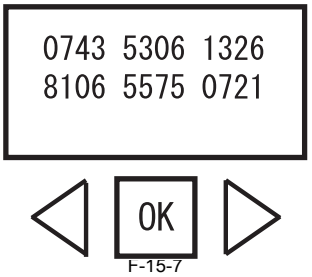
(1) Go into the service mode and indicate the below mentioned service mode. (Key operation to go into the service mode is to be pressed one at a time. Orders are *, 2, 8, *).
After going into the service mode, use the arrow on the both sides of the touch panel and press 'OK' if the decision is made.
(2) Indicate '#LMS'.
(3) Press 'OK' and indicate '#LMS INACTIVE'.
(4) Indicate 'BDL-IMAGE (CARPS 2 for Japanese market) or 'SEND'.
(5) Press 'OK'.
(6) Press '2' from the numeric keypad and press 'OK'.



F-15-6

1.Take a note of the license transmit number which will be indicated with 24 digits.
2.The indicated number is just for this operation and it would not be saved.
3.If the power is switched off, the indicated number will disappear and if the note of the number has not been taken, transmission of the license will be impossible.
4.Even pressing the reset key to clear the indication, there will be no recovery of the number.

Example of the transmitted license indication:



F-15-7

(7) Switch the power supply OFF/ON of the main machine.

Reference:
At procedure (4) when indicating the license option, it indicates ' 001 1'. The last digit '1' shows that the license is active.
After transmitting the license the last digit will change to '2', which means that the license has been transmitted.
If the option is standard equipped, the last digit will indicate '3', which means that the license could not be transmitted.

(8) Contact the dealer and inform the function inactive certificate key, serial number of the transmission origin device, and serial number of new transmiting device, which is necessary to transmit the license.
Upon given information above, new license key will be issued, which the license could be registered to the new transmitting device.
(9) Register the new license key to the transmitted device and confirm that the function is active.

15.12 eRDS Parameter Settings (E-RDS)

15.12.1 Settings Related to e-RDS

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Settings related to e-RDS are described below.

T-15-27

Item	Description
E-RDS SWITCH	e-RDS OFF/ON setting (0:OFF / 1:ON)When used (ON), the counter information and error information are sent to UGW.Default: 0 (OFF)
RGW-ADDRESS	URL of UGWDefault: URL of actual UGWCharacter string length: 129 bytes (including NULL, one-byte codes only)
RGW-PORT	Port No. of UGW Default: 443Setting range: 1 to 65535
COM-TEST	Execution of communication test An attempt is made to connect to UGW, judges whether connection is successful, and displays "COM-TEST OK" or "COMTEST NG" as the judgment result.
COM-LOG	Details of communication test resultThe log of errors in communication with UGW is displayed. The error information includes the error occurrence time, error code, and details of the error.Maximum log count: 5Error information length: Max. 128 characters (excluding NULL)

15.13 Counter Indication (COUNTER)

15.13.1 Counters

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This copier is furnished with a maintenance/supplies counter set (DRBL-1), which can be used to gain rough measures of when to replace supplies. The counter set increments by one on counting each sheet of small-sized paper (up to A4/LTR) and by two on counting each sheet of large-sized paper (larger than A4/LTR).

T-15-28

Maintenance counter list		
Item	**Counter**	**Explanation**
TOTAL (Total counter)	SERVICE1	Service total counter 1
	SERVICE2	Service total counter 2
	TTL	Total counter
	COPY	Total copy counter
	PDL-PRT	PDL print counter
	FAX-PRT	Fax print counter
	REP-PRT	Report print counter
	2-SIDE	Double-sided copy/print counter
	SCAN	Scan counter
PICK-UP (Paper pickup counter)	C1	Cassette 1 jam counter
	C2	Cassette 2 jam counter
	C3	Cassette 3 jam counter
	C4	Cassette 4 jam counter
	MF	Manual feed tray pickup total counter
	2-SIDE	Double-sided paper pickup total counter
FEEDER (Feeder related counters)	FEED	Feeder pickup total counter
	DFOP-CNT	ADF open/close hinge counter
JAM (Jam counters)	TTL	Unit total jam count
	FEEDER	Feeder total jam count
	SORTER	Finisher total jam count
	2-SIDE	Duplex unit jam counter
	MF	Manual feed tray jam counter
	C1	Cassette 1 jam counter
	C2	Cassette 2 jam counter
	C3	Cassette 3 jam counter
	C4	Cassette 4 jam counter
MISC (Other required counter)	WST-TNR	Waste toner counter

T-15-29

Parts counter list			
Item	**Counter**	**Explanation**	**Service life**
DRBL-1 (Unit supplies)	FX-UNIT	Fixing unit paper pass count	150,000
	TR-ROLL	Transfer charger roller high-voltage ON count	150,000
	DV-UNT-C	Developing unit rotation count	150,000
	M-PU-RL	Manual feed tray pickup roller paper pass count	150,000
	M-SP-PD	Manual feed tray separation pad paper pass count	150,000

15.13.2 Clearing Counters

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

- Maintenance/parts counter all clear
Execute service mode > CLEAR > COUNTER to clear all maintenance/parts counters.

- Counter clear on parts replacement
Press the numeric keypad key 0 after displaying the counter for a part just replaced, and the counter will be cleared individually.

15.14 Report Output (REPORT)

15.14.1 Report Output

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

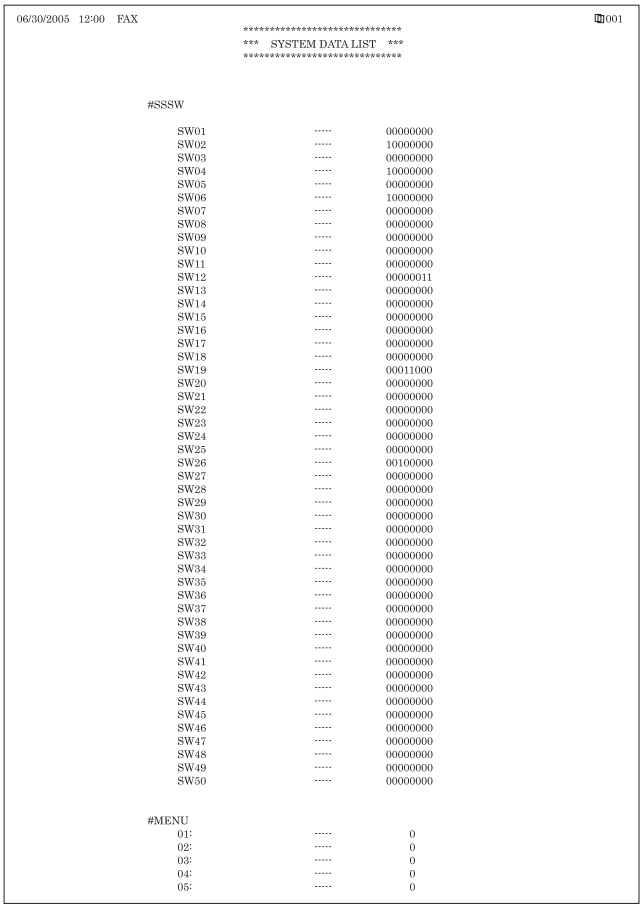
The table below lists the kinds of reports that are supported.

Item	Explanation
SERVICE DATA LIST	Service mode service soft switch output (SSSW, MENU, NUMERIC Param., SPECIAL, NCU, SCAN, PRINT, SYSTEM, ROM, start date)
SYSTEM DATA LIST	Service mode service soft switch output (SSSW, MENU, NUMERIC Param., SPECIAL, NCU, SCAN, PRINT, SYSTEM, ROM, start date) System dump list output
SYSTEM DUMP LIST	Transmission count, reception count, record chart count, error count and other outputs
COUNTER REPORT	Counter output
ERROR LOG LIST	Jam and error history output
SPEC LIST	Type setting, print speed, memory size, ROM indication, adjustment data and other outputs
SERVICE LABEL	Output of an entry format for the service label affixed to the rear cover as shipped
ERDS COM LOG LIST	Output of communication error log information related to e-RDS
ENV. LOG LIST	Output of environmental log information

15.14.2 System Data List

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Use it to check the settings associated with the service soft switch and service parameters.



06/30/2005 12:00 FAX 001

****
*** SYSTEM DATA LIST ***
****

#SSSW

SW01	-----	00000000
SW02	-----	10000000
SW03	-----	00000000
SW04	-----	10000000
SW05	-----	00000000
SW06	-----	10000000
SW07	-----	00000000
SW08	-----	00000000
SW09	-----	00000000
SW10	-----	00000000
SW11	-----	00000000
SW12	-----	00000011
SW13	-----	00000000
SW14	-----	00000000
SW15	-----	00000000
SW16	-----	00000000
SW17	-----	00000000
SW18	-----	00000000
SW19	-----	00011000
SW20	-----	00000000
SW21	-----	00000000
SW22	-----	00000000
SW23	-----	00000000
SW24	-----	00000000
SW25	-----	00000000
SW26	-----	00100000
SW27	-----	00000000
SW28	-----	00000000
SW29	-----	00000000
SW30	-----	00000000
SW31	-----	00000000
SW32	-----	00000000
SW33	-----	00000000
SW34	-----	00000000
SW35	-----	00000000
SW36	-----	00000000
SW37	-----	00000000
SW38	-----	00000000
SW39	-----	00000000
SW40	-----	00000000
SW41	-----	00000000
SW42	-----	00000000
SW43	-----	00000000
SW44	-----	00000000
SW45	-----	00000000
SW46	-----	00000000
SW47	-----	00000000
SW48	-----	00000000
SW49	-----	00000000
SW50	-----	00000000

#MENU

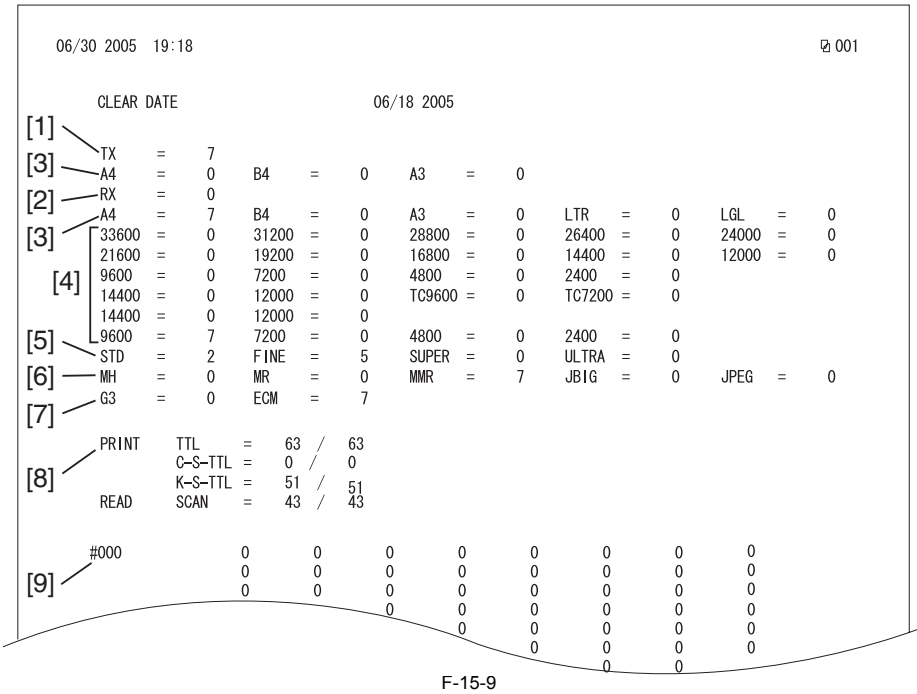
01:	-----	0
02:	-----	0
03:	-----	0
04:	-----	0
05:	-----	0

F-15-8

15.14.3 System Dump List

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

- System Dump List
Use it to check the history of communications, both successful and error.



06/30 2005 19:18 001

CLEAR DATE 06/18 2005

[1] TX = 7
[3] A4 = 0 B4 = 0 A3 = 0
[2] RX = 0
[3] A4 = 7 B4 = 0 A3 = 0 LTR = 0 LGL = 0
[4] 33600 = 0 31200 = 0 28800 = 0 26400 = 0 24000 = 0
21600 = 0 19200 = 0 16800 = 0 14400 = 0 12000 = 0
9600 = 0 7200 = 0 4800 = 0 2400 = 0
14400 = 0 12000 = 0 TC9600 = 0 TC7200 = 0
14400 = 0 12000 = 0
[5] 9600 = 7 7200 = 0 4800 = 0 2400 = 0
[6] STD = 2 FINE = 5 SUPER = 0 ULTRA = 0
[7] MH = 0 MR = 0 MMR = 7 JBIG = 0 JPEG = 0
G3 = 0 ECM = 7

[8] PRINT TTL = 63 / 63
C-S-TTL = 0 / 0
K-S-TTL = 51 / 51
READ SCAN = 43 / 43

[9] #000 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0
0 0 0 0
0 0

F-15-9

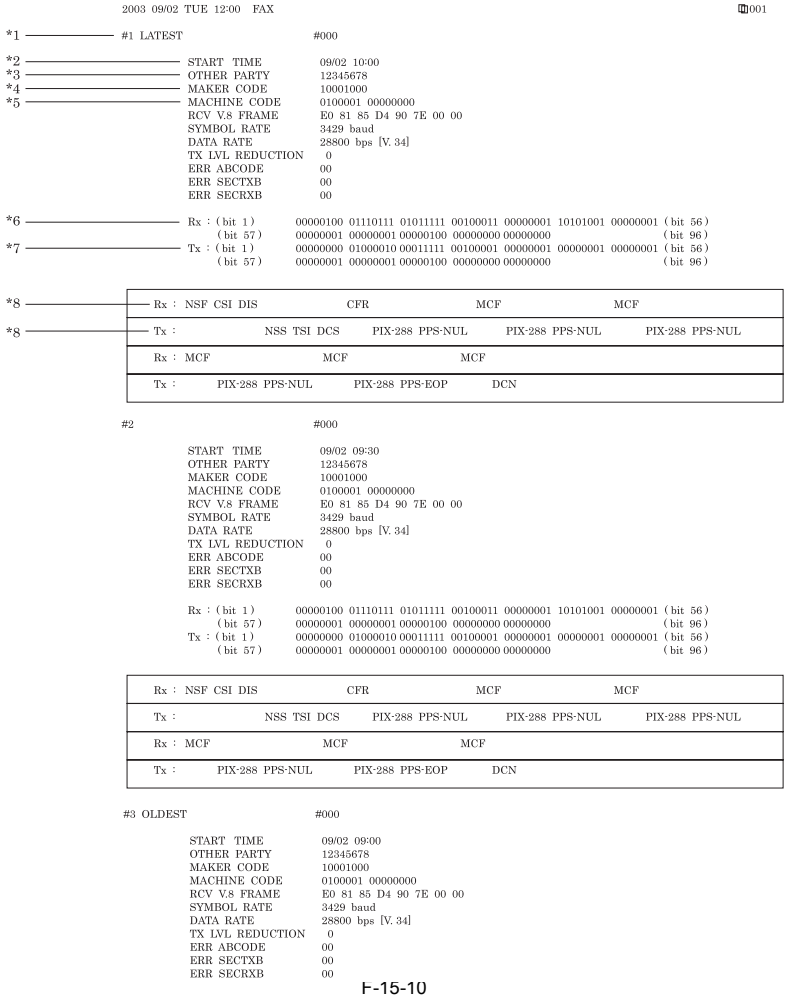
*1: TX, number of total pages transmission.
*2: Total number of pages transmitted/received according to original size.
*3: RX, number of total pages reception.

*4: Total number of pages transmitted and received for each modem speed
*5: Total number of pages transmitted/received in connection with different modem speeds (Standard, Fine, Super Fine, Ultra Fine).
*6: Total number of pages transmitted and received for each coding method
*7: Total number of pages transmitted and received in each mode
*8: Total number of pages printed/scanned
*9: Total number of occurrences for error code

T-15-30

Indication sample					
##280	1	7	3	0	0
	##280 number of errors	##281 number of errors	##282 number of errors		

It provides error information on the 3 most recent communications.



F-15-10

*1: service error code.
*2: START TIME, date and time (in 24-hr notation).
*3: OTHER PARTY, telephone number sent by the other party.
*4: MAKER CODE, manufacturer code.
*5: MACHINE CODE, model code.
*6: bit 1 through bit 96 of DIS, DCS, or DTC that has been received.
*7: bit 1 through bit 96 of DIS, DCS, or DTC that has been transmitted.
*8: RX, procedural signal received; TX, procedural signal transmitted.

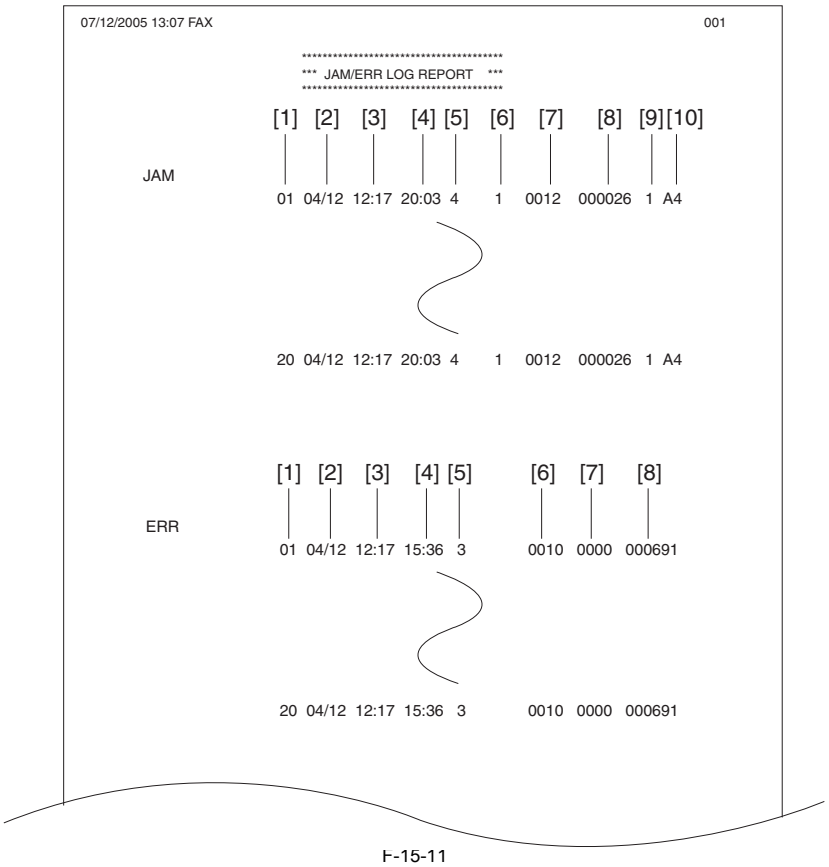
15.14.4 Counter List

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Explanation: Maintenance/supplies counter output.
(For more detailed information about the maintenance/supplies counter output, execute service mode > Display counter information > Counters.)

15.14.5 Error Log List

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-15-11

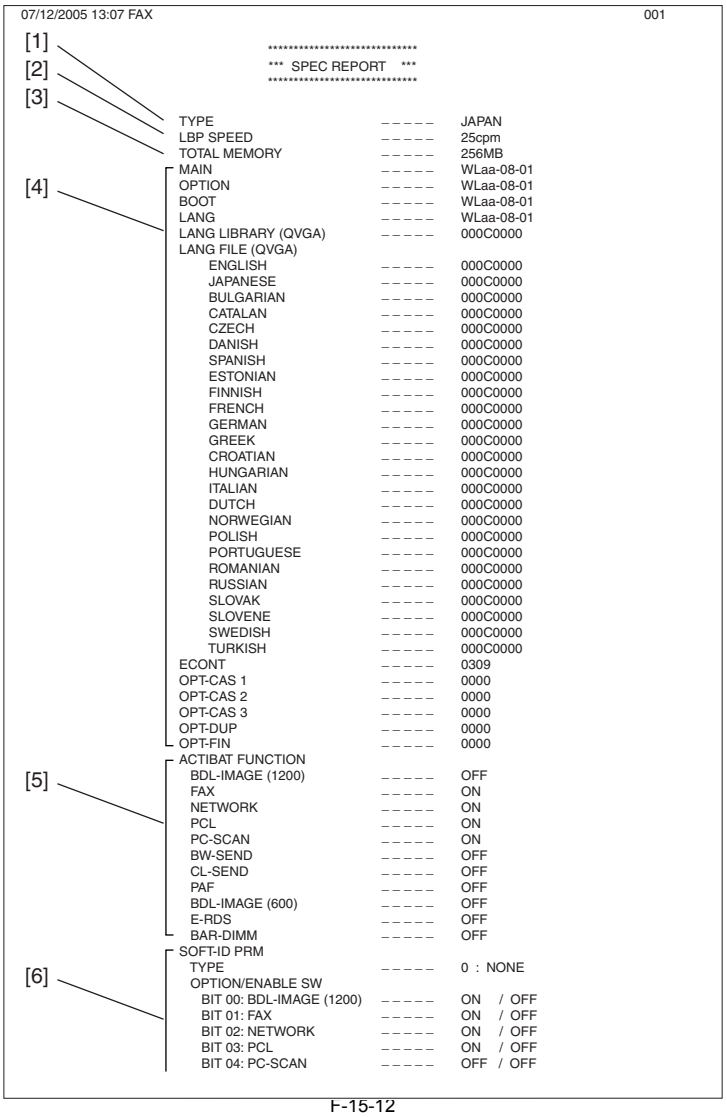
Jam history description (JAM)		
	Item	**Explanation**
[1]	Number	The larger the number of a jam, the more recently it has occurred.
[2]	Jam date	Date of jam occurrence
[3]	Jam time	
[4]	Jam recovery time	
[5]	Location	3: Host machine, 4: ADF, 5: Finisher
[6]	Occurrence category	0: Host machine, 1: ADF, 2: Finisher

Jam history description (JAM)			
	Item	**Explanation**	
[7]	Jam code	Code	Jam cause
	Host machine	0104	Pickup assembly delay jam
		0208	Pickup assembly stationary jam
		010c	Delivery assembly jam
		010e	Second delivery assembly delivery delay jam
		0210	Delivery stationary jam
		0212	Second delivery assembly stationary jam
		0214	Host machine retention paper jam
		1118	Door open jam
		0120	Duplexing paper sensor 1 delay jam
		0221	Duplexing paper sensor 1 stationary jam
		0124	Duplexing paper sensor 2 delay jam
		0228	Duplexing paper sensor 2 stationary jam
	ADF	0000	Unknown jam
		0007	Initial stationary
		0008	Read sensor delay jam
		0009	Read sensor stationary jam
		000a	Paper absence (Pull out the document.)
		000c	Delivery reversal sensor delay jam
		000d	Delivery reversal sensor stationary jam
		000e	ADF cover open error
		000f	User ADF open error
		0010	Pickup NG
	Finisher	0130	Inlet sensor delivery delay jam
		0231	Inlet sensor delivery stationary jam
		0033	Bundle delivery jam
		0035	Stapler jam
		1036	Power-on jam
		1137	Door open jam
[8]	Total counter display		
[9]	Pickup stage position	0: Manual feed tray, 1: Cassette 1, 2: Cassette 2, 3: Cassette 3, 4: Cassette 4	
[10]	Paper size		

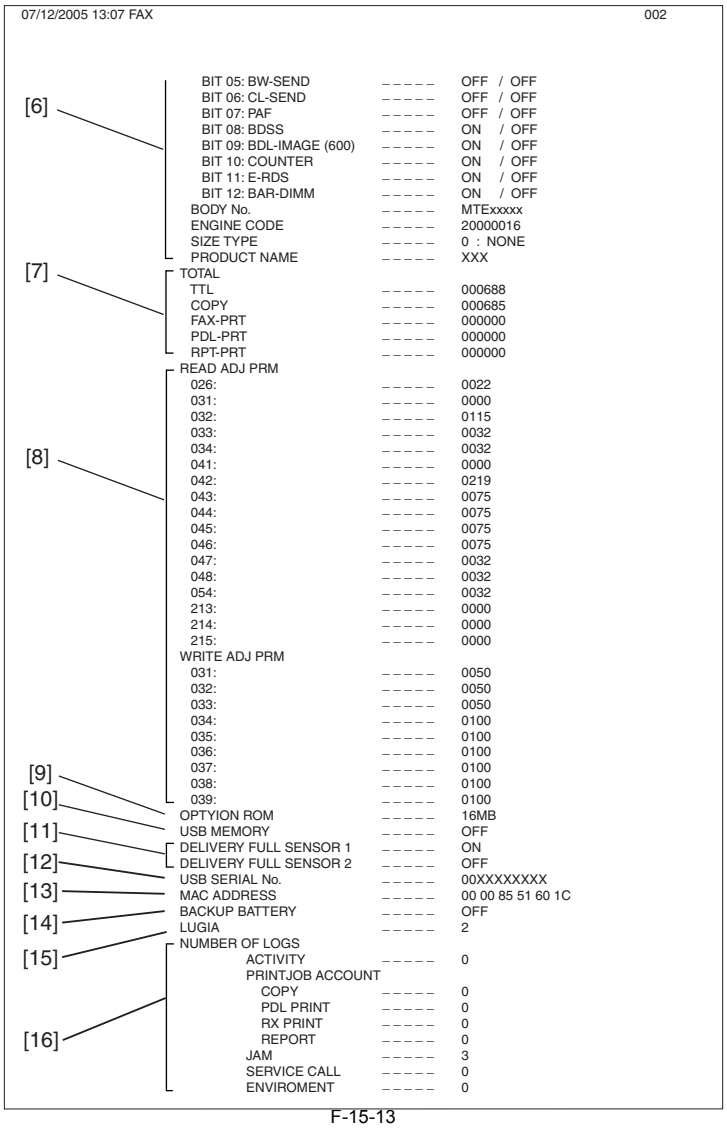
Error history description (ERR)		
	Item	**Explanation**
[1]	Number	The larger the number of an error, the more recently it has occurred.
[2]	Error date	Date of error occurrence
[3]	Error time	
[4]	Location	3: Main unit, 5: Finisher
[5]	Error code	Error code (4-digit code; for a definition of the code, see the "Error Code" Chapter.)
[6]	Detail code	Detail code of the error code (4-digit code; for a definition of the code, see the "Error Code" Chapter.)
[7]	Total counter display	

15.14.6 Spec List

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480


07/12/2005 13:07 FAX
001
[1]
[2]
[3]
[4]
[5]
[6]
****
*** SPEC REPORT ***
****
TYPE _____ JAPAN
LBP SPEED _____ 25cpm
TOTAL MEMORY _____ 256MB
MAIN _____ WLaa-08-01
OPTION _____ WLaa-08-01
BOOT _____ WLaa-08-01
LANG _____ WLaa-08-01
LANG LIBRARY (QVGA) _____ 000C0000
LANG FILE (QVGA)
ENGLISH _____ 000C0000
JAPANESE _____ 000C0000
BULGARIAN _____ 000C0000
CATALAN _____ 000C0000
CZECH _____ 000C0000
DANISH _____ 000C0000
SPANISH _____ 000C0000
ESTONIAN _____ 000C0000
FINNISH _____ 000C0000
FRENCH _____ 000C0000
GERMAN _____ 000C0000
GREEK _____ 000C0000
CROATIAN _____ 000C0000
HUNGARIAN _____ 000C0000
ITALIAN _____ 000C0000
DUTCH _____ 000C0000
NORWEGIAN _____ 000C0000
POLISH _____ 000C0000
PORTUGUESE _____ 000C0000
ROMANIAN _____ 000C0000
RUSSIAN _____ 000C0000
SLOVAK _____ 000C0000
SLOVENE _____ 000C0000
SWEDISH _____ 000C0000
TURKISH _____ 000C0000
ECONT _____ 0309
OPT-CAS 1 _____ 0000
OPT-CAS 2 _____ 0000
OPT-CAS 3 _____ 0000
OPT-DUP _____ 0000
OPT-FIN _____ 0000
ACTIBAT FUNCTION
BDL-IMAGE (1200) _____ OFF
FAX _____ ON
NETWORK _____ ON
PCL _____ ON
PC-SCAN _____ ON
BW-SEND _____ OFF
CL-SEND _____ OFF
PAF _____ OFF
BDL-IMAGE (600) _____ OFF
E-RDS _____ OFF
BAR-DIMM _____ OFF
SOFT-ID PRM
TYPE _____ 0 : NONE
OPTION/ENABLE SW
BIT 00: BDL-IMAGE (1200) _____ ON / OFF
BIT 01: FAX _____ ON / OFF
BIT 02: NETWORK _____ ON / OFF
BIT 03: PCL _____ ON / OFF
BIT 04: PC-SCAN _____ OFF / OFF

F-15-12



F-15-13

[1] Type setting
[2] Print speed
[3] Memory size
[4] ROM version (MAIN/BOOT/LANG*1(language liblary/language file version)ECONT/option cassette/duplex unit/finisher)
[5] Activation function ON/OFF
[6] Soft ID information
[7] Total counter (TOTAL/COPY/FAX/PDL/REPORT record counts)
[8] Adjustment data (factory scan/record adjustment values)
[9] Option ROM availability
[10] USB memory availability
[11] No. 1/No. 2 paper full sensor sensor availability
[12] USB serial number
[13] MAC address
[14] Backup battery availability
[15] ROM version (Reader controller PCB)
[16] output the number of histories (communication history, copy/print/report/JOB history of the reception print, jam history, E code history, humidity log)
*1: only for the touch panel model

15.14.7 Service Label

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Enter the value given in the service label affixed to the rear cover when it has been replaced with a new one.

#PRINT>#PRINT NUMERIC					#SCAN>#SCAN NUMERIC				
	FACTORY	1	2	3		FACTORY	1	2	3
031	50				026				
032	50				031				
033	50				032				
034	100				033				
035	100				034				
036	100				041				
037	100				042				
038	100				043				
039	100				044				
					045				
					046				
					047				
#SCAN>#SCAN NUMERIC					048				
					054				
					213				
					214				
body No:BFDxxxxx					215				

F-15-14

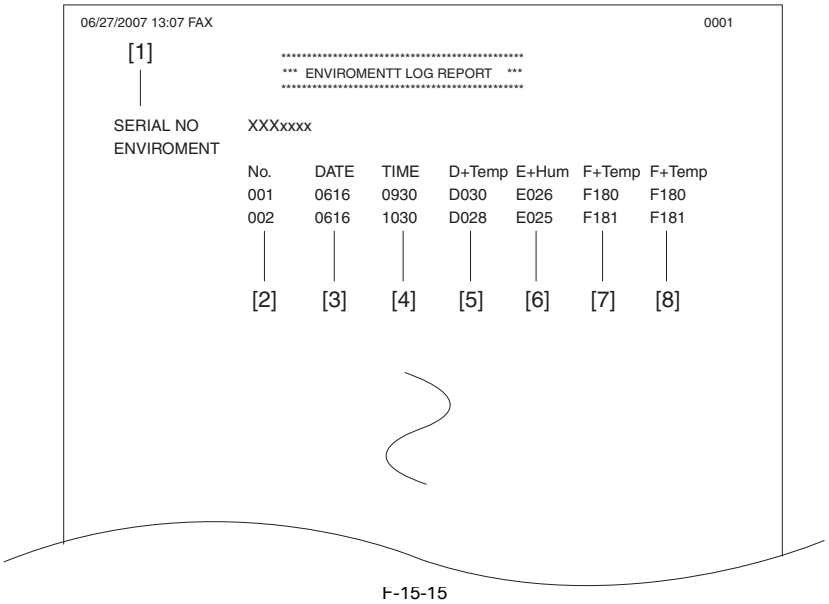
15.14.8 e-RDS Communication Error Log List

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Description: Detailed information output when a communication error occurs
(For the output error message, see "RDS > Error Messages".)

15.14.9 Environmental Log Report

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-15-15

History description			
	Item	**Explanation**	
[1]	Serial number	Serial number of this machine	
[2]	Number	The larger the number of a enviroment log data, the more recently it has occurred.	
[3]	Date	Data acquisition day	
[4]	Time	Data acquisition time	
[5]	Temperature (deg)		
[6]	Humidity (%)		
[7]	Fixing roller temperature 1 (deg)		
[8]	Fixing roller temperature 2 (deg)		

15.15 Download (DOWNLOAD)

15.15.1 Download

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The following parts of this unit can be upgraded by executing download mode using the service support tool (SST) (for more information, see the "Upgrading" section):

Main unit
- Flash ROM (system + boot) mounted on the image processor PCB

Accessory
- ROM mounted on the finisher controller PCB
- ROM mounted on the PCL board

15.16 Data Initialization Mode (CLEAR)

15.16.1 Clear

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Group	Item	Explanation
TEL & USER DATA		Clears all user-registered and -set areas of telephone registration data and user data. (Telephone registration refers to the registration of codes on one-touch dialing, abbreviated dialing, and group dialing.)
SERVICE DATA		Clears the system dump list, except for counters and clear dates.
COUNTER		Clears the maintenance counter, parts counter and mode-specific counters. Initializes the counter (numerator) in the system dump list.
TYPE		Initializes user data and service data to suit specified destination settings.
SOFT-CNT		Not used
HST	ACTIVITY	Initializes the activity report
	ACCOUNT	Clears print histories.
	JAM	Clears the jam history.
	ERR	Clear the error (error code) history.
	ALARM	Clears the alarm history.
	ENVIROMENT	Initializes the enviroment log data.
CARD		Clears department management information held in the controller before the card reader is demounted.
ERR	E355	Not used
	E719	Clears card reader errors.
PWD		Clears the system administrator's password.
FILE SYSTEM*1		Delete unnecessary language files in the USB memory.
FORMAT*1	USB MEMORY	Format the USB memory. (This mode is used when the USB memory error is damaged and E744 occurs.)
	LICENSE DRIVE	Not used
CA-KEY		Initializes an installed CA certification.
ERDS-DAT		The settings related to e-RDS are cleared to the factory settings.
ALL		Clears user and service data (except for some scan parameters and print parameters), and the counter setting/registration data in the system dump list, except for the print count.

*1 Only for the touch panel model.

15.17 Error Display (ERROR DISPLAY)

15.17.1 Error Display

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

An error code is displayed when a service error has occurred. The E code is displayed in the upper step, and the detail code is displayed the bottom step.

15.18 ROM Management (ROM)

15.18.1 ROM Display

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

The table below lists the items of ROM display mode that are supported.

T-15-31

Item	Explanation
MAIN	Displays the version number of the ROM (SYSTEM) mounted on the image processor PCB.
MAIN2	Displays the version of the ROM (BOOT) mounted on the image processor PCB.
ECONT	Displays the version number of the ROM mounted on the DC controller PCB.
OPROM	Displays the version number of the option ROM.

15.19 Test Mode (TEST)

15.19.1 Overview

15.19.1.1 Outline

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Test mode must be executed by keeping track the flow of menu items appearing on the LCD. Menu items in test mode are organized into seven blocks as described below. Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.

1. D-RAM test ((1) D-RAM)
Checks to see if data can be correctly written to and read from D-RAM.

2. Scan test ((2) SCAN TEST)
Used to adjust contact sensor output and the position at which a document fed from the ADF is scanned.

3. Print test ((3) PRINT TEST)
Used to generate service test patterns.

4. Modem test ((4) MODEM TEST)
Performs relay actuation, modem DTMF and tonal signal transmission/reception tests.

5. Aging test ((5) AGING TEST)
Not used.

6. Function test ((6) FUNCTION TEST)
Used to verify the operations of microswitches, sensors, speakers and ADF functions.

7. Roller cleaning mode ((0) ROLLER CLEAN)
Used to clean the delivery roller or ADF pickup roller by idling them.

15.19.1.2 Test Mode Menu List (Touch Panel Type)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Test mode menu list
To invoke test mode, follow these steps:

1) Enter service mode.
Sequentially press the Additional functions key, 2 key, 8 key, and Additional functions key on the operation panel.
2) Press the arrow key on the touch panel to display "TEST MODE".
3) Press [OK].

T-15-32

Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.					
Group	**Subgroup**	**Item 1**	**Item 2**	**Item 3**	**Explanation**
TEST MODE [1] - [9], [#]					
(1) DRAM [1] - [2]					D-RAM data check
	(1) D-RAM TEST				Write/read check
	(2) D-RAM TEST				Read check
(2) SCAN TEST [1] - [8]					

Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.					
Group	**Subgroup**	**Item 1**	**Item 2**	**Item 3**	**Explanation**
	(1) SHADING				Automatic gain adjustment
	(3) SHEET POS ADJ				CS position adjustment
	(4) TRASH DETECT				Dust detection
	(5), (6), (9), (*)				Not used
(3) PRINT TEST [1] - [9]					
	(1)				Not used
	(2)				All-black output
	(3)				Not used
	(4)				Back belt output
	(5), (6), (7), (8), (9), (*)				Not used
(4) MODEM TEST [1] - [9]					
	(1) RELAY TEST [1] - [2]				
		(1) RELAY TEST 1			NCU relay (and switch) ON/OFF test
		(2) RELAY TEST 2			230 V common NCU test
	(2) FREQ TEST [0] - [6]				Frequency test
		(0) FREQ TEST 462Hz			
		(1) FREQ TEST 1100Hz			
		(2) FREQ TEST 1300Hz			
		(3) FREQ TEST 1500Hz			
		(4) FREQ TSST 1650Hz			
		(5) FREQ TEST 1850Hz			
		(6) FREQ TEST 2100Hz			
	(4) G3 SIGNAL TX TEST [0] - [8]				G3 signal transmission test
		(0) G3 SIGNAL TX TEST 300bps			
		(1) G3 SIGNAL TX TEST 2400bps			
		(2) G3 SIGNAL TX TEST 4800bps			
		(3) G3 SIGNAL TX TEST 7200bps			
		(4) G3 SIGNAL TX TEST 9600bps			
		(5) G3 SIGNAL TX TEST TC7200bps			
		(6) G3 SIGNAL TX TEST TC9600bps			
		(7) G3 SIGNAL TX TEST 12000bps			
		(8) G3 SIGNAL TX TEST 14400bps			
	(5) DTMF TEST [0] - [9], * , #				DTMF transmission test
		(0) G3 SIGNAL TX TEST 300bps			
		(1) G3 SIGNAL TX TEST 2400bps			
		(2) G3 SIGNAL TX TEST 4800bps			
		(3) G3 SIGNAL TX TEST 7200bps			
		(4) G3 SIGNAL TX TEST 9600bps			
		(5) G3 SIGNAL TX TEST TC7200bps			
		(6) G3 SIGNAL TX TEST TC9600bps			
		(7) G3 SIGNAL TX TEST 12000bps			
		(8) G3 SIGNAL TX TEST 14400bps			
		(9) G3 SIGNAL TX TEST TC9600bps			
		(*) G3 SIGNAL TX TEST 12000bps			
		(#) G3 SIGNAL TX TEST 14400bps			
	(6) MODEM TEST				Tonal sign reception test
	(8) G3 V.34 Tx TEST				V34 G3 signal transmission test
	(9)				Not used
(5) AGING TEST					Not used
(6) FUNCTION TEST [1] - [9]					

Numerals enclosed in parentheses denote a numeric keypad key to be pressed each.					
Group	**Subgroup**	**Item 1**	**Item 2**	**Item 3**	**Explanation**
	(1) FUNCTION TEST G3 4800bps				G3 4800 bps signal transmission test
	(3) 6-3 SENSOR [1] - [6]				Sensor checks
		(1) SENSOR CHECK 0:NORMAL 1:LATCH			
			(0) SENSOR NORMAL [0] - [2]		
				(0) CAS 0 REG 0 DEL 0 MULTI 0	
				(1) TONER 0 FULL 0 2ND-DEL 0000	
				(2) OP1 0000 OP2 0000 OP3 0000 PATH 0000	
			(1) SENSOR LATCH [0] - [2]		
				(0) CAS 0 REG 0 DEL 0 MULTI 0	
				(1) TONER 0 FULL 0 2ND-DEL 0000	
				(2) OP1 0000 OP2 0000 OP3 0000 PATH 0000	
		(2) SWITCH CHECK [0] - [1]			
			(0) CAS 0000 LOCK 0000		
			(1) OP1 0000 OP2 0000 OP3 0000		
		(3) DS ON DES of HPS ON BCVS of			
		(4) REF xxx ANT xxx |ANT-REF| xxx			
		(5) BSCT on BDAC[A3] BDSS3-0 [of of of of]			
		(6) NCR Sts: NCR xxxxx DPT MGN OK RDY 0101			
		(7) LAST of EXIT of REG of CVR of			
		(8) WID1 on WID2 on LEN1 on LEN2 on			
		(9) D+Temp xxxx E+Hum xxxx F+Temp xxxx xxxx			
	(4) ADF FEED TEST				ADF delivery operation test
	(5) BOOK FEED TEST				Book copy operation test
	(6) 6-6 SPEAKER FREQ:[1] VOL:[2]				Speaker volume and buzzer frequency test
	(7)				Not used
	(8) FUNCTION TEST LAMP TEST ALL				Lamp test
	(9) LINE TEST [1] - [3]				Line signal reception test
(0) ROLLER CLEAN 0:PRT 1:ADF					Printer and ADF roller cleaning
	(0) PRT ROL CLEAN Press start key				
	(1) ADF ROL CLEAN Press start key				

15.19.2 DRAM Test

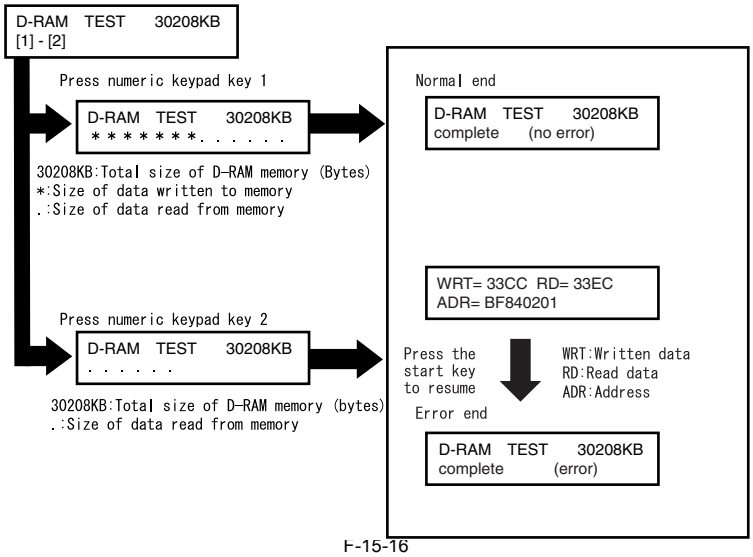
15.19.2.1 D-RAM Test<(1) D-RAM TEST>

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

D-RAM Test((1) D-RAM)
Press the numeric keypad key 1 on the test mode menu to select the D-DRAM test.
Press numeric keypad keys 1 and 2 during the D-DRAM test to carry out the individual tests described below.

Numeric keypad key 1
Checks to see if data can be correctly written to and read from all areas of D-RAM (SDRAM). If an error occurs making this check, the test is aborted, with an error appearing on the touch panel (LCD).

Numeric keypad key 2
Checks to see if data can be correctly read from all areas of D-RAM (SDRAM). If an error occurs making this check, the test is aborted, with an error appearing on the touch panel (LCD).



F-15-16

15.19.3 Scan Test

15.19.3.1 Scan Test ((2) SCAN TEST)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Scan test ((2) SCAN TEST)

Press the numeric keypad key 2 on the test mode menu to select the CCD test.
Press numeric keypad keys 1, 3 and 4 during the CCD test to carry out the individual tests described below.

Numeric keypad key 1
Corrects the LED output of the contact sensor and sets its parameters automatically. (AGC adjustment)

Numeric keypad key 3
Adjusts the document scan position (only on models with the ADF feature installed). Adjusts the position of the contact sensor for scanning documents fed from the ADF automatically.

Numeric keypad key 4
Detects trash at reader scan positions A/B/C.
Pos A: Reference read position
Pos B: About 0.5 mm inside of the roller from the reference position
Pos C: About 1.0 mm inside of the roller from the reference position

15.19.4 Print Test

15.19.4.1 Print Test ((3) PRINT TEST)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Print test ((3) PRINT TEST)
Press the numeric keypad key 3 on the test mode menu to select the print test.
Press numeric keypad keys 2 and 4 during the print test to generate test patterns as described below. Two kinds of service test patterns are available. Other test patterns are reserved for factory/development purposes.

Numeric keypad key 2
(2) BLACK: All-black output
Numeric keypad key 4
(4) ENDURANCE: Black belt output

To cancel test printing, press the stop key.

Use it to make sure that the print pattern does not have white lines or uneven image.

Use it to make sure that the print pattern does not have contraction/ elongation of an image or dirt/black line.s

F-15-17

15.19.5 Modem Test

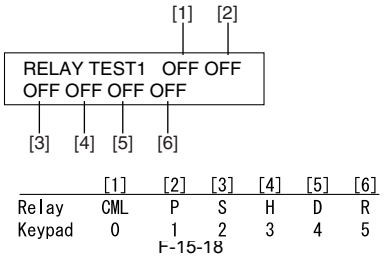
15.19.5.1 Modem Test ((4) MODEM TEST)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

MODEM test((4) MODEM TEST)
These tests test modem and NCU transmission and reception. The modem tests check whether signals are sent correctly from the modem by comparing the sound of the signals from the speaker with the sounds from a normal modem.
End this test by pressing the Stop key.

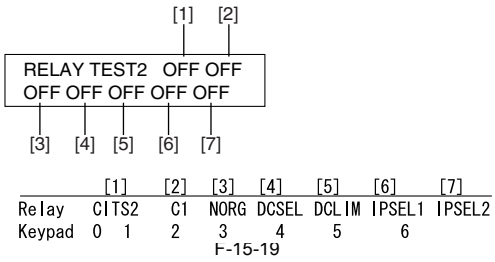
Keypad	Type	Description
1	Relay test	Use it to turn on/off a selected relay to execute a switch-over test
2	Frequency test	The modem sends tonal signals from the modular jack and the speaker.
4	G3 signal transmission test	The modem sends G3 signals from the modular jack and the speaker.
5	DTMF signal reception test	Use it to generate the DTMF signal coming from the modem using the telephone line terminal and the speaker.
6	Tonal signal reception test	Use it to monitor a specific frequency and the DTMF signal received from the telephone line terminal by causing them to be indicated on the LCD (i.e., the presence/absence as detected). The reception signal is generated by the speaker.
8	V.34 G3 signal transmission test	The modem sends V.34 G3 signals from the modular jack and the speaker.

Relay Test
Press '1'or '2' on the keypad on the Modem test menu to select relay test mode. Use the keypad to operate the various relays of the NCU. '2' on the keypad is used for 230V machine.
Numeric keypad key 1
The input key and relay are shown below:



F-15-18

Numeric keypad key 2
The input key and relay are shown below:



F-15-19

The touch panel (LCD) is turned on or off in relation to the transmission of the relay operation signal as is operated on the keypad; for this reason, you cannot use the touch panel (LCD) to check a fault on a single relay.

Frequency Test
A press on '2' on the keypad from the MODEM test menu selects the frequency test.
In this test, signals of the following frequencies from the modem are transmitted using the telephone line terminal and the speaker. To select a different frequency, use the keypad.

Keypad	Frequency
1	462Hz
2	1100Hz
3	1300Hz
4	1500Hz
5	1650Hz
6	1850Hz
7	2100Hz

MEMO:
The frequency and the output level of individual frequencies are in keeping with the output level set in service mode.

G3 Signal Transmission Test
A press on '4' on the keypad from the MODEM test menu selects the G3 signal transmission test. In this test, the following G3 signals from the modem are transmitted using the telephone line terminal and the speaker. To select a different transmission speed, use the keypad.

Keypad	Transmission speed
0	300bps
1	2400bps
2	4800bps
3	7200bps
4	9600bps
5	TC7200bps
6	TC9600bps
7	12000bps
8	14400bps

MEMO:
The output level of individual signals is in keeping with the setting made in service mode.

DTMF Signal Transmission Test
A press on '5' on the MODEM test menu selects the DTMF signal transmission test. In the test, the following DTMF signals from the modem are transmitted using the telephone line terminal and the speaker. The number pressed on the keypad selects a specific DTMF signal.

MEMO:
The output level of individual signals is in keeping with the setting made in service mode.

Tonal/DTMF Signal Reception Test
A press on '6' on the keypad from the MODEM test menu selects the tonal signal/DTMF signal reception 0 test. In this signal, the tonal signal/DTMF signal received from the telephone line terminal can be checked to find out if it was detected by the modem.

Tonal signal reception test

```
MODEM TEST
OFF OFF OFF
```

OFF OFF OFF
- changes from '0' to '1' in response to detection of a signal of 462 ± 25 Hz.
- changes from '0' to '1' in response to detection of a signal of 1100 ± 30 Hz.
- changes from '0' to '1' in response to detection of a signal of 2100 ± 25 Hz.

DTMF signal reception test

```
MODEM TEST
OFF OFF OFF  5
```

The received DTMF signals are indicated starting from the right using the 2nd character of the display.

F-15-20

V.34 G3 Signal Transmission Test
A press on '8' on the keypad from the MODEM test menu selectes the V.34 G3 signal transmission test. The V.34 G3 signals below are sent from the modem using the modular jack and the speaker by pressing the start key. The Baud rate can be changed with the keypad, and the Speed can be changed with the left/right arrow key.

Keypad	Baud rate
0	3429baud
1	3200baud
2	3000baud
3	2800baud
4	2743baud
5	2400baud

Left/right arrow key	Transmission speed
	2400bps
	4800bps
	7200bps
	9600bps
<	12000bps
	14400bps
	16800bps
	19200bps
	21600bps
>	24000bps
	26400bps
	28800bps
	31200bps
	33600bps

15.19.6 Faculty Test

15.19.6.1 Function Test ((6) FUNCTION TEST)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

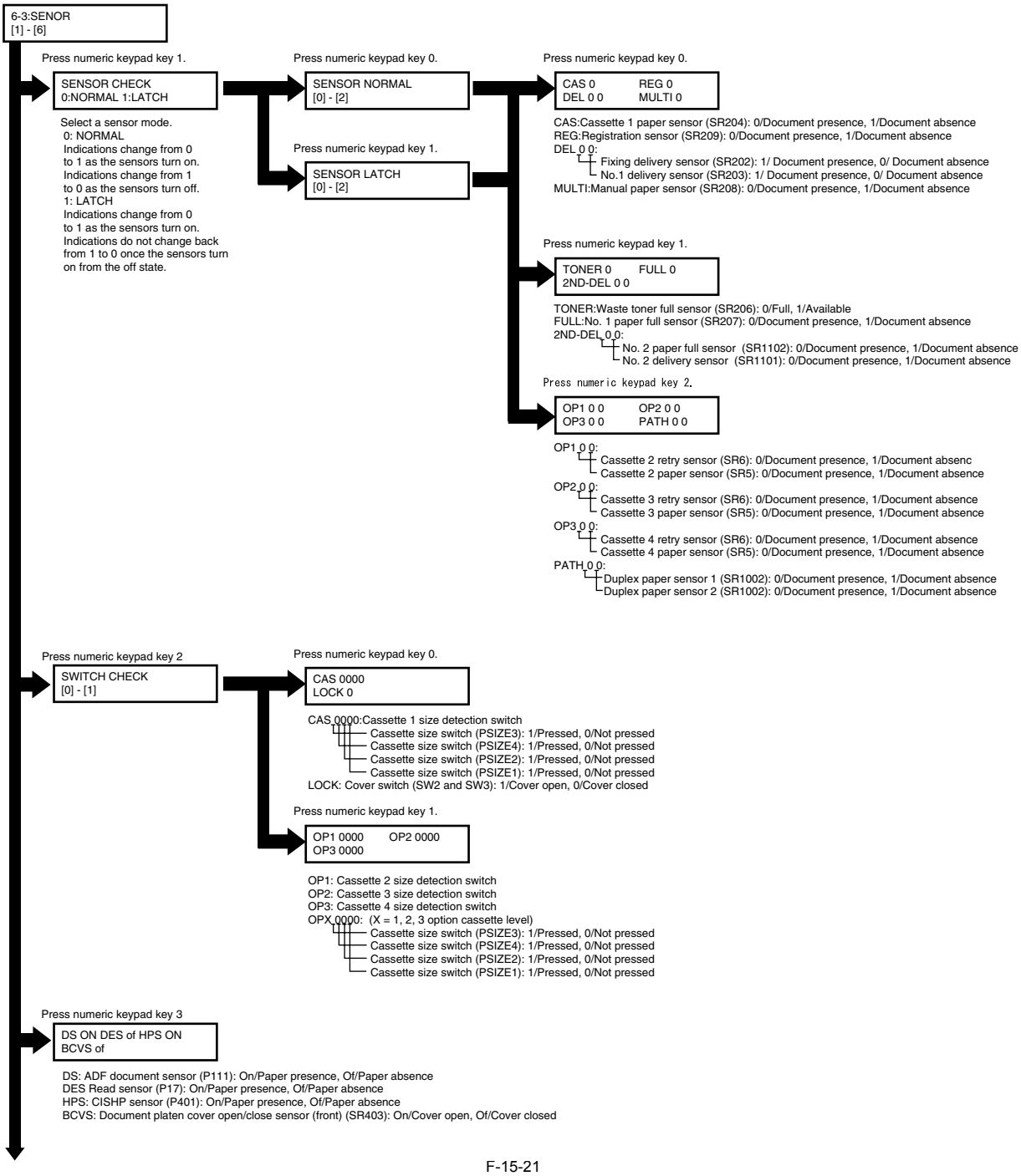
Function test ((6) FUNCTION TEST)
Press the numeric keypad key 6 on the test mode menu to select the function test.
Press numeric keypad keys 1 and 3 to 9 during the function test to enter the menus listed below.

T-15-33

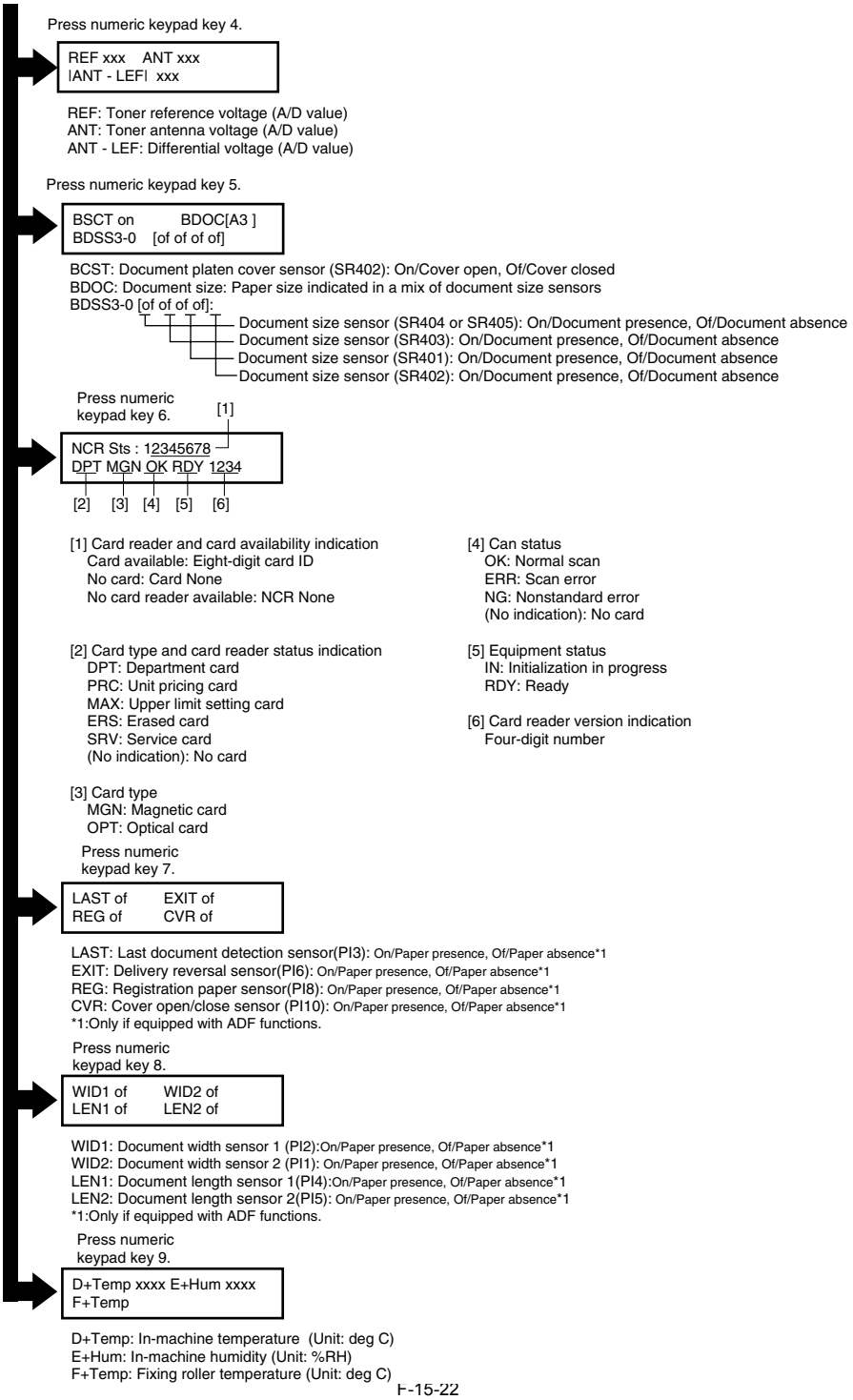
Keypad	Item	Explanation
1	G3 signal transmission test	Transmits 4800-bps G3 signals to a telephone line and speaker.
2	Not used	
3	Sensor test	Sensor actuation test
4	ADF test	ADF operation test
5	Book test	Host machine operation test
6	Speaker test	Speaker operation test
7	Not used	
8	Lamp test	Contact sensor illumination test
9	Line signal reception test	NCU board signal sensor and frequency counter operation test

G3 signal transmission test (6-1: G3 480 bps Tx)
Press numeric keypad key 1 on the FUNCTION TEST menu to select the G3 signal transmission test. This test transmits 4800-bps G3 signals from the telephone line connection terminal and speaker.

Sensor test (6-3: SENSOR)
This mode is used to verify the status of the unit sensors from the touch panel (LCD) indications. Press numeric keypad key 3 on the FUNCTION TEST menu to select the sensor test. The touch panel (LCD) indications change as the associated sensors turn on and off.


6-3:SENOR
[1] - [6]
Press numeric keypad key 1.
SENSOR CHECK
0:NORMAL 1:LATCH
Select a sensor mode.
0: NORMAL
Indications change from 0 to 1 as the sensors turn on.
Indications change from 1 to 0 as the sensors turn off.
1: LATCH
Indications change from 0 to 1 as the sensors turn on.
Indications do not change back from 1 to 0 once the sensors turn on from the off state.
Press numeric keypad key 0.
SENSOR NORMAL
[0] - [2]
Press numeric keypad key 1.
SENSOR LATCH
[0] - [2]
Press numeric keypad key 0.
CAS 0 REG 0
DEL 0 0 MULTI 0
CAS:Cassette 1 paper sensor (SR204): 0/Document presence, 1/Document absence
REG:Registration sensor (SR209): 0/Document presence, 1/Document absence
DEL 0 0:
Fixing delivery sensor (SR202): 1/ Document presence, 0/ Document absence
No.1 delivery sensor (SR203): 1/ Document presence, 0/ Document absence
MULTI:Manual paper sensor (SR208): 0/Document presence, 1/Document absence
Press numeric keypad key 1.
TONER 0 FULL 0
2ND-DEL 0 0
TONER:Waste toner full sensor (SR206): 0/Full, 1/Available
FULL:No. 1 paper full sensor (SR207): 0/Document presence, 1/Document absence
2ND-DEL 0 0:
No. 2 paper full sensor (SR1102): 0/Document presence, 1/Document absence
No. 2 delivery sensor (SR1101): 0/Document presence, 1/Document absence
Press numeric keypad key 2.
OP1 0 0 OP2 0 0
OP3 0 0 PATH 0 0
OP1 0 0:
Cassette 2 retry sensor (SR6): 0/Document presence, 1/Document absenc
Cassette 2 paper sensor (SR5): 0/Document presence, 1/Document absence
OP2 0 0:
Cassette 3 retry sensor (SR6): 0/Document presence, 1/Document absence
Cassette 3 paper sensor (SR5): 0/Document presence, 1/Document absence
OP3 0 0:
Cassette 4 retry sensor (SR6): 0/Document presence, 1/Document absence
Cassette 4 paper sensor (SR5): 0/Document presence, 1/Document absence
PATH 0 0:
Duplex paper sensor 1 (SR1002): 0/Document presence, 1/Document absence
Duplex paper sensor 2 (SR1002): 0/Document presence, 1/Document absence
Press numeric keypad key 2
SWITCH CHECK
[0] - [1]
Press numeric keypad key 0.
CAS 0000
LOCK 0
CAS 0000:Cassette 1 size detection switch
Cassette size switch (PSIZE3): 1/Pressed, 0/Not pressed
Cassette size switch (PSIZE4): 1/Pressed, 0/Not pressed
Cassette size switch (PSIZE2): 1/Pressed, 0/Not pressed
Cassette size switch (PSIZE1): 1/Pressed, 0/Not pressed
LOCK: Cover switch (SW2 and SW3): 1/Cover open, 0/Cover closed
Press numeric keypad key 1.
OP1 0000 OP2 0000
OP3 0000
OP1: Cassette 2 size detection switch
OP2: Cassette 3 size detection switch
OP3: Cassette 4 size detection switch
OPX 0000: (X = 1, 2, 3 option cassette level)
Cassette size switch (PSIZE3): 1/Pressed, 0/Not pressed
Cassette size switch (PSIZE4): 1/Pressed, 0/Not pressed
Cassette size switch (PSIZE2): 1/Pressed, 0/Not pressed
Cassette size switch (PSIZE1): 1/Pressed, 0/Not pressed
Press numeric keypad key 3
DS ON DES of HPS ON
BCVS of
DS: ADF document sensor (P111): On/Paper presence, Of/Paper absence
DES Read sensor (P17): On/Paper presence, Of/Paper absence
HPS: CISHP sensor (P401): On/Paper presence, Of/Paper absence
BCVS: Document platen cover open/close sensor (front) (SR403): On/Cover open, Of/Cover closed

F-15-21

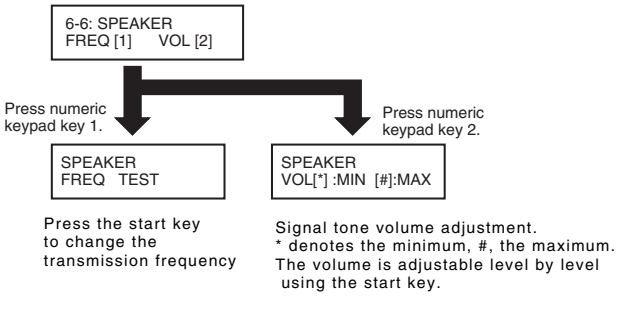


F-15-22

ADF feed test (6-4: ADF FEED TEST)
ADF operation verification mode. Press numeric keypad key 4 on the FUNCTION TEST menu to select the ADF feed test. Place a document on the document platen and press the start key to transfer the document at the speed matched to the scan resolution setting. In this test, enter a transfer speed between 500 and 2000 (mm/s) from the numeric keypad and verify the transfer speed. Select between the ON and OFF states with the left and right cursor keys to select between single-sided document feed (OFF) and double-sided document feed (ON).

Book feed test (6-5: BOOK FEED TEST)
Performs a book feed operation with a specified magnification and in a specified size.

Speaker test (6-6: SPEAKER)
Speaker operation verification mode. Press numeric keypad key 6 on the FUNCTION TEST menu to select the speaker test. In this test, the speaker generates tonal signals at 100 Hz intervals, from 200 Hz to 5 kHz, in varying sound volumes. Signal output from the speaker is thus verified.



F-15-23

Lamp test (6-8: LAMP TEST)
Press numeric keypad key 8 on the FACULTY menu to select the scan lamp illumination mode. The test checks to see if the scan lamp is on or not.
Numeric keypad key 1 selects LAMP TEST ALL. Press the start key to turn on all scan lamps. LAMP TEST AGC is not used.
Line signal reception test (6-9 LINE DETECT)
Press numeric keypad key 9 on the FACULTY menu to select the line signal reception test. In this test, verify the successful operations of the NCU signal sensor and the frequency counter. Menu 1 detects the CI state, while menu 3 detects the CNG signal.

Test menu 1
Press numeric keypad key 1 on the LINE DETECT menu to select test menu 1. When CI is detected on the telephone line connection terminal, the touch panel (LCD) display changes from OFF to ON, indicating the received frequency. The touch panel (LCD) also displays the on-hook or off-hook state of an external telephone set as detected. The touch panel (LCD) displays, from left to right, CI, CI frequency, hook port and FC with indications of 1:ON and 0:OFF.

Test menu 2
Press numeric keypad key 2 on the LINE DETECT menu to select test menu 2. When the CNG signal is detected on the telephone line connection terminal, the touch panel (LCD) display changes from OFF to ON, indicating the received frequency. The touch panel (LCD) displays the status of CML, CNG and FED detection, from left to right, with ON/OFF indications. Numeric keypad key 2 turns on the CML relay to detect CNG.

Test menu 3
Press numeric keypad key 3 on the LINE DETECT menu to select test menu 3. When the CNG signal is detected on the telephone line connection terminal, the touch panel (LCD) display changes from OFF to ON, indicating the received frequency. The touch panel (LCD) displays the status of CML, CNG and FED detection, from left to right, with ON/OFF indications. Numeric keypad key 3 turns off the CML relay to detect CNG.

15.19.7 Cleaning Mode

15.19.7.1 Roller cleaning mode ((0) ROLLER CLEAN)

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

Roller cleaning mode ((0) ROLLER CLEAN)
Press numeric keypad key 0 in test mode to select roller cleaning mode. Press numeric keypad keys 1 and 2 during this test to enter the following menus:
Numeric keypad key 1
Press the start key clean the ADF pickup/feed rollers by idling.

Press the stop key to exit this mode.

Numeric keypad key 2
Press the start key clean the unit transfer rollers by idling.
Press the stop key to exit this mode.

Chapter 16 Upgrading

Contents

16.1 Outline

16.1.1 Overview of Upgrade

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

This machine and options can be upgraded by downloading system software programs from the personal computer (hereafter called as the PC) in which a service support tool (hereafter called SST) has been loaded.
System software programs and upgrade tools are listed in the following table:

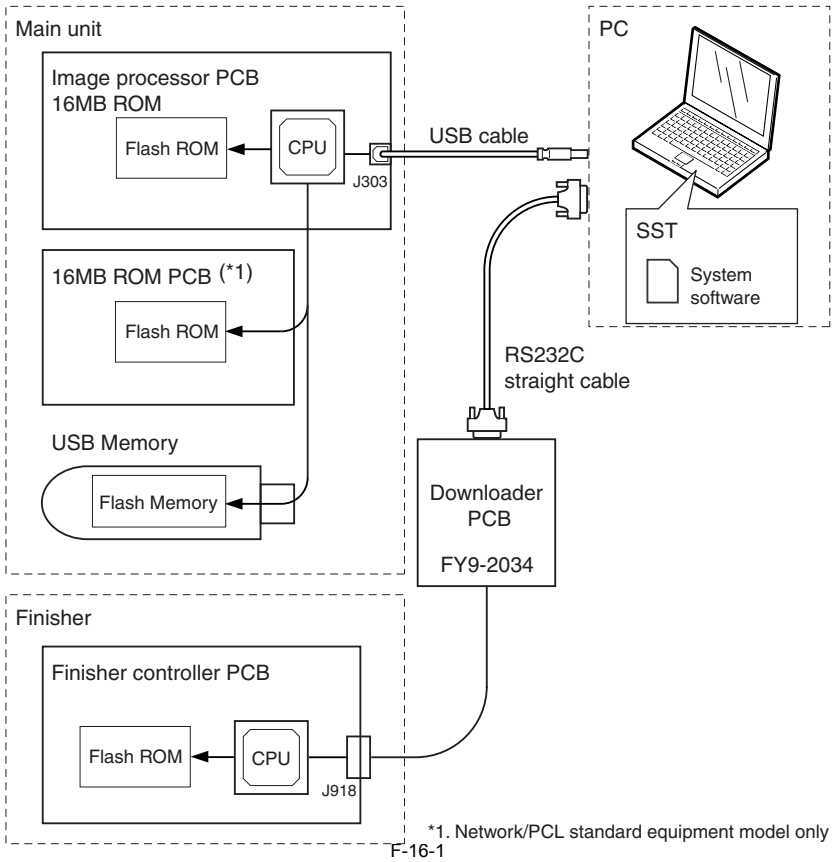
T-16-1

Type	System software type	Upgrade tool	Remarks
		SST	
Main unit	System (main controller)	Yes	Main controller also controls the reader.
	Boot (boot program)	Yes	
	Language (language module)	Yes	USB memory
	PCL_op	Yes	16MB ROM PCB (Network/PCL standard equipment model only)
Option	Fin_U2 (Finisher)	Yes	Dedicated service tool (Downloader PCB: FY9-2034)

⚠
Pay attention to the following points when updagrading.
1. When updagrading Boot, make sure to update Boot first.
2. When updagrading the following software, make sure to update all to the same version.
- System
- Language
- PCL (Network/PCL standard equipment model only)

16.1.2 Overview of Service Support Tool

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



F-16-1

When using the SST, select "#DOWNLOAD" in the service mode to place the main unit in the download mode. (The finisher need not enter the download mode.)

16.2 Making Preparations

16.2.1 Registering the System Software

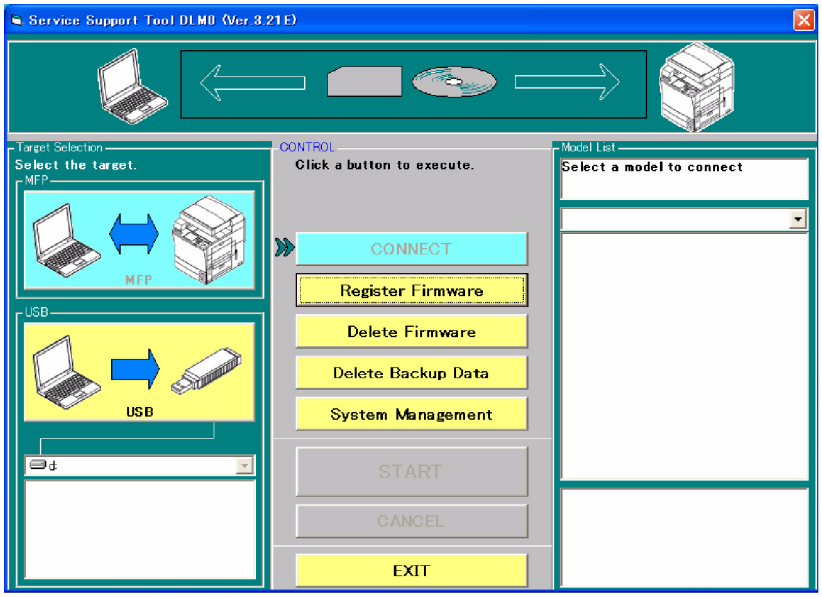
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

System software programs to be downloaded need to be registered in the SST.
The system software programs are registered with the names listed below.

<Software Programs Preinstalled in Main Unit>
Machine name: MF7400_iR2030
Unit name:
- Main controller: System
- Boot program: Boot
- 16MB ROM PCB: PCL_op (Network/PCL standard equipment model only)
- 32MB ROM PCB: PCL_Common (not used)
- CA certificate (distributed only as necessary)

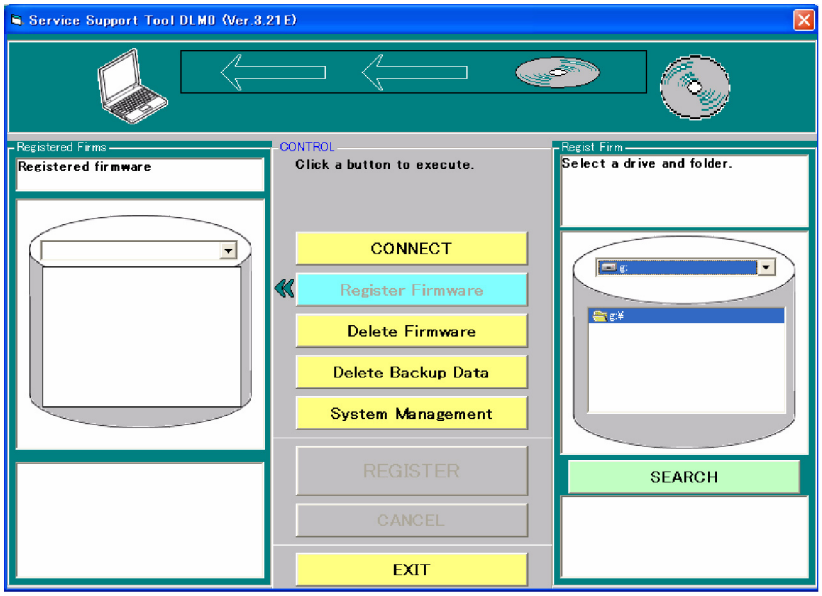
[Preparation]
Have the following ready:
- PC in which SSTv3.21 or later is installed (Download a CA certificate of version of SSTv3.31 or higher)
- System CD

[System Software Registration Procedure]
1) Start the PC.
2) Insert the system CD in the PC.
3) Start SST.
4) Click the "Register Firmware" button.



F-16-2

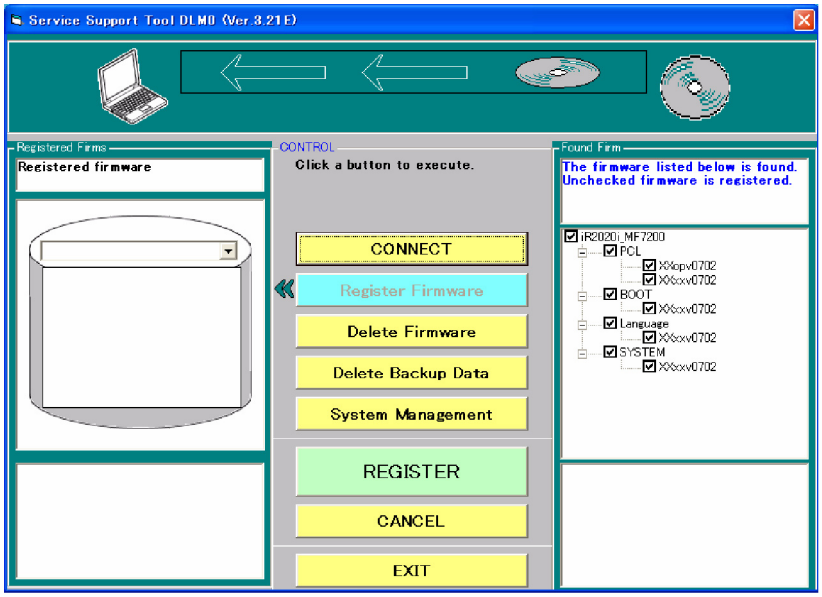
5) Select the drive in which the system CD is inserted, and then click the "SEARCH" button.



F-16-3

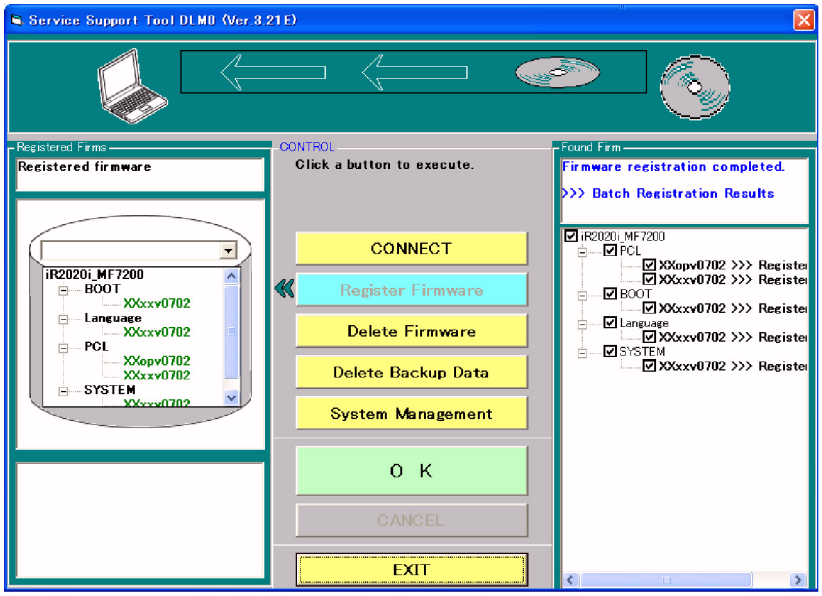
6) A list of system software programs contained in the system CD is displayed. Uncheck the checkboxes of unnecessary folders and system software programs, and then click the "REGISTER" button.

This machine allows two or more system software programs to be register at the same time. However, it does not allow two or more them to be downloaded at the same time. If two or more software programs need to be upgraded, download them one by one.



F-16-4

7) When the system software program registration result appears, click the OK button.

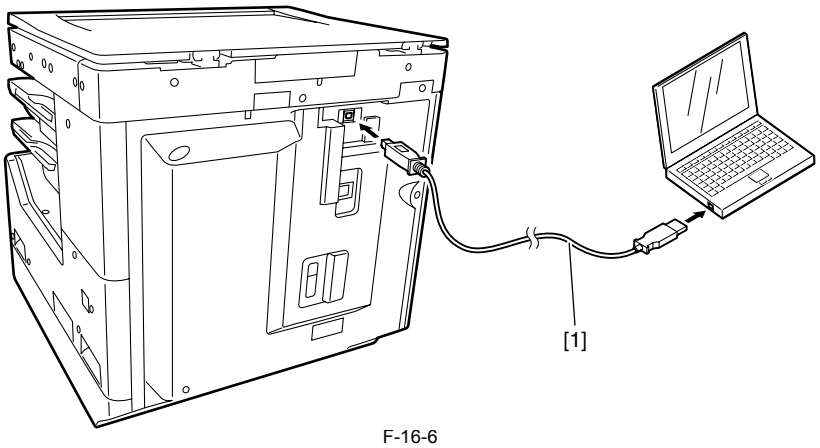


F-16-5

16.2.2 Connection

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Turn off the main power switch of this machine, and then disconnect the cables connected to this machine.
2) Connect USB connector on the back of this machine to the PC using the USB cable [1].



F-16-6

16.3 Downloading System Software

16.3.1 Downloading the System Software

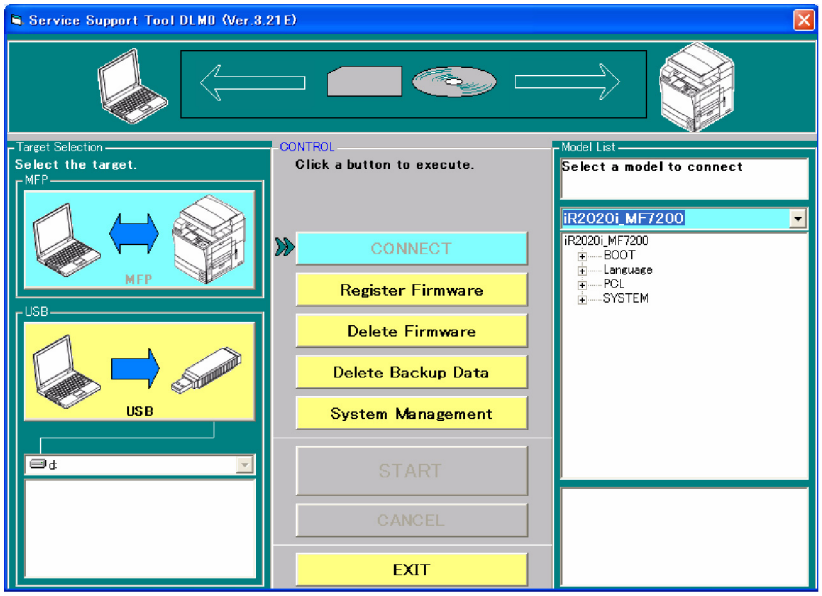
16.3.1.1 Downloading Procedure

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

1) Turn on the power switch of the PC and start SST.
2) When the power switch is turned on, the Found New hardware Wizard appears. Click "Cancel".

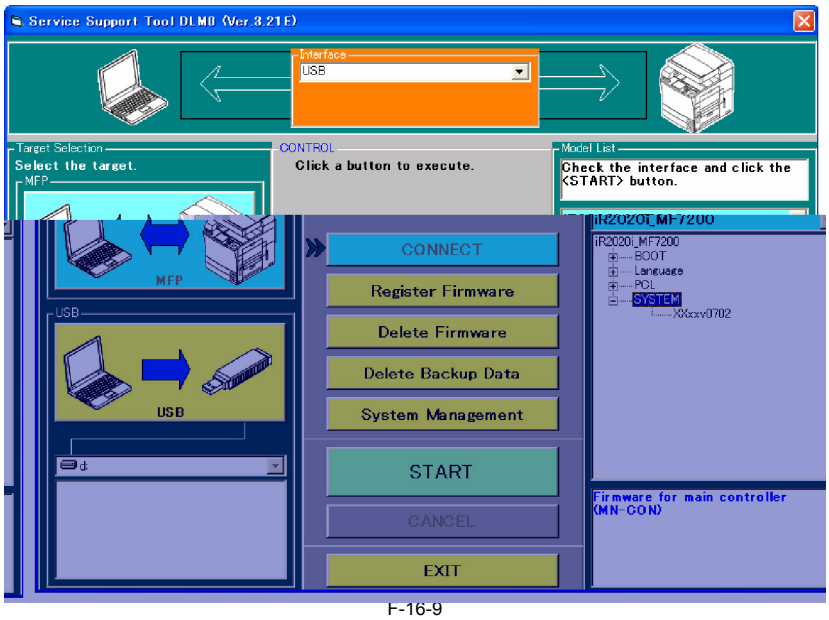
F-16-7

3) Select "MFP" in "Target Selection", and then select "MF7400_iR2030" in "Model List".



F-16-8

4) Double-click the "System" folder in "Model List" to check the system software version. Select "USB" in "Interface", and then click the "START" button.

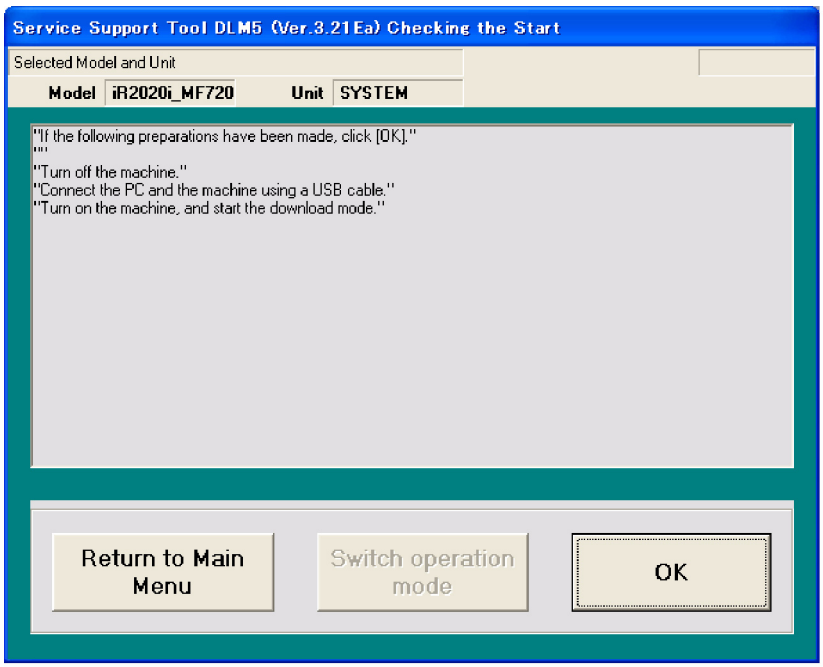


F-16-9

5) Turn on the power switch of the host machine.
6) Press the following keys on the control panel to enter the service mode.

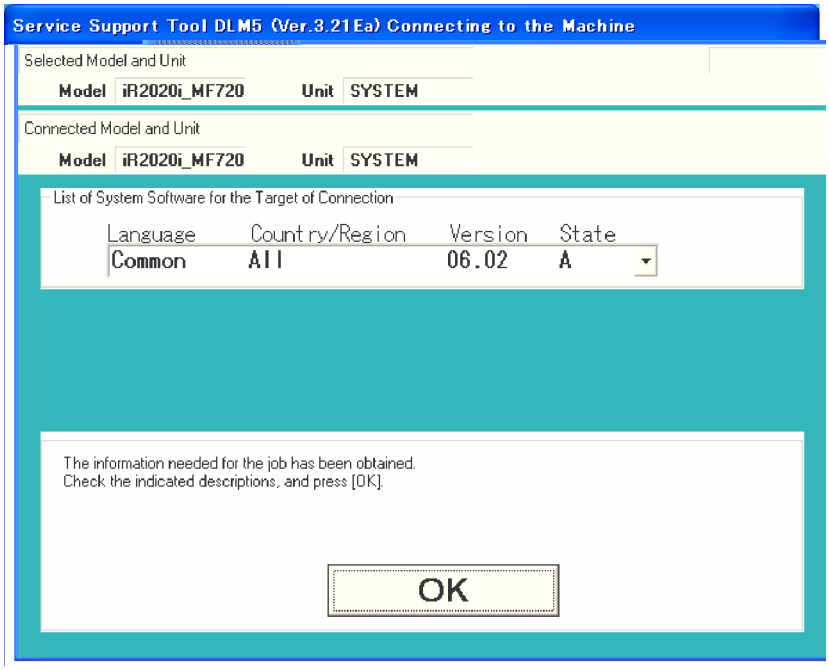
Asterisk > 2 Key > 8 Key > Asterisk

7) Using ◀ or ▶, select "#DOWNLOAD".
8) Press the OK key on the control panel to place the host machine in the downloading wait mode (No indicated on LCD).
9) Press the OK button on the SST screen displayed on the display of the PC.



F-16-10

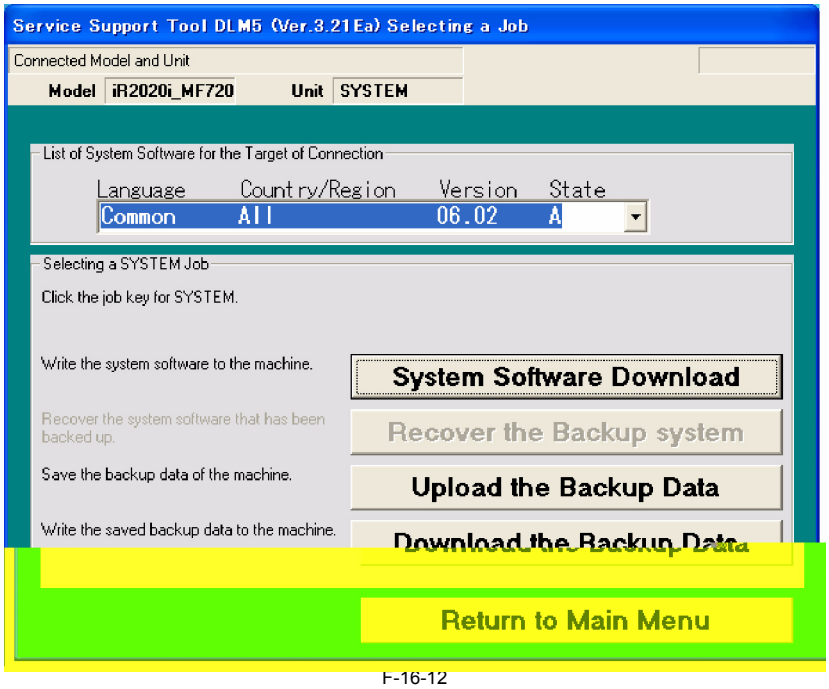
10) When connection is complete, the following screen appears. Click the OK button.



F-16-11

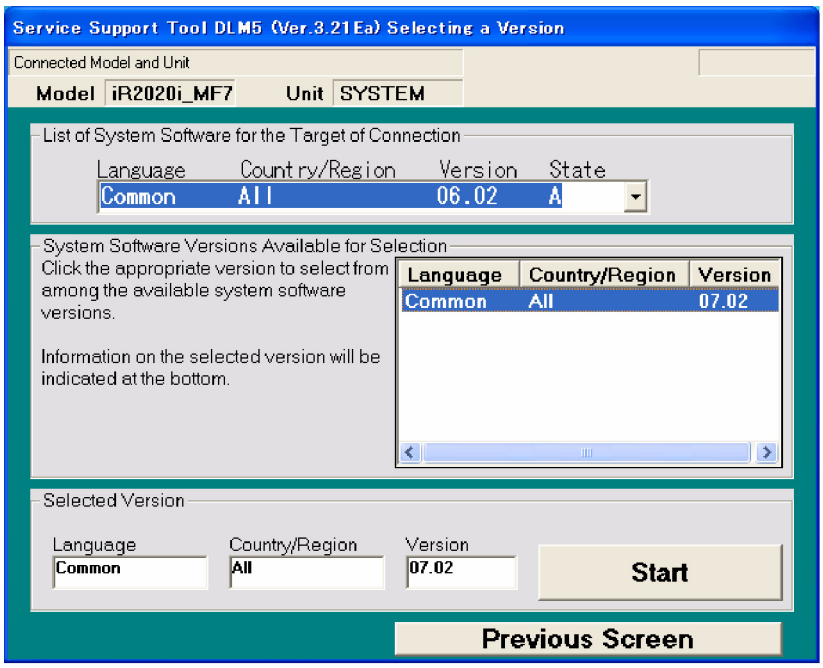
11) Click "System Software Download" on the Selecting a Job screen.

MEMO:
This machine does not use the "Upload the Backup Data" and "Download the Backup Data" functions not displayed on the Selecting a Job screen.



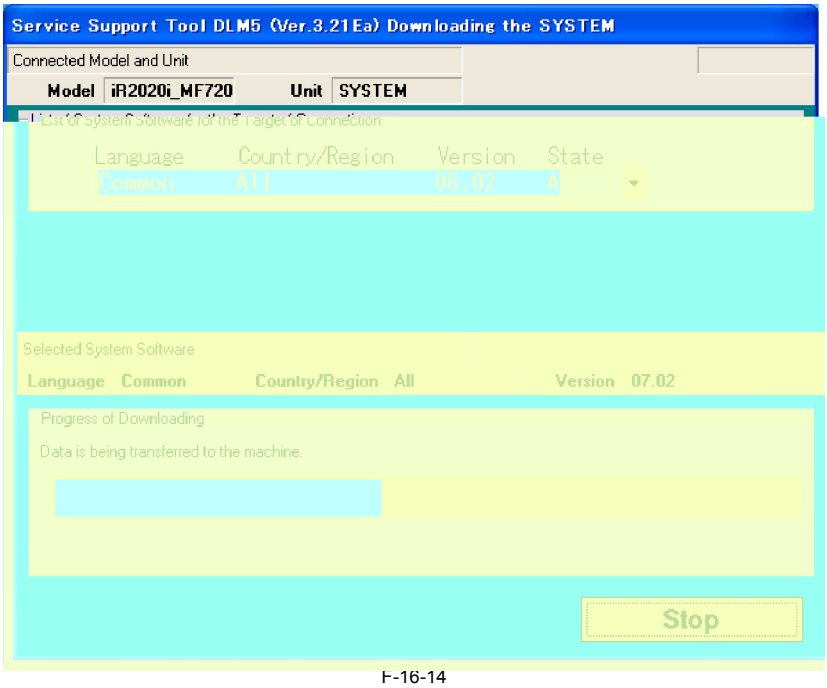
F-16-12

12) Select the version of the system software to download from the list. Check that the selected version is displayed in "Selected Version", and then click the "START" button.



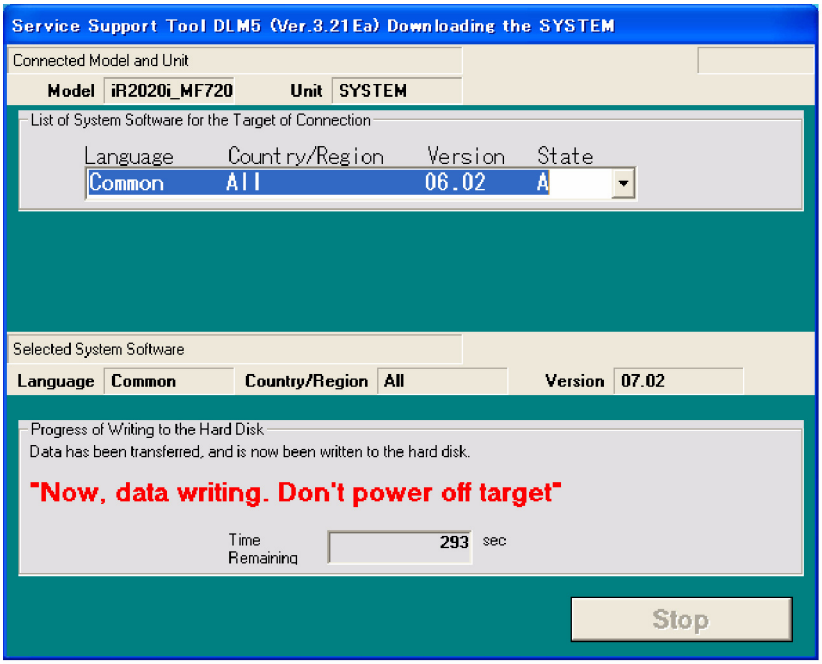
F-16-13

13) When downloading starts, the progress of downloading is displayed by the progress bar.



F-16-14

14) While the received data is being written to the flash ROM after completion of downloading, the following screen is displayed:

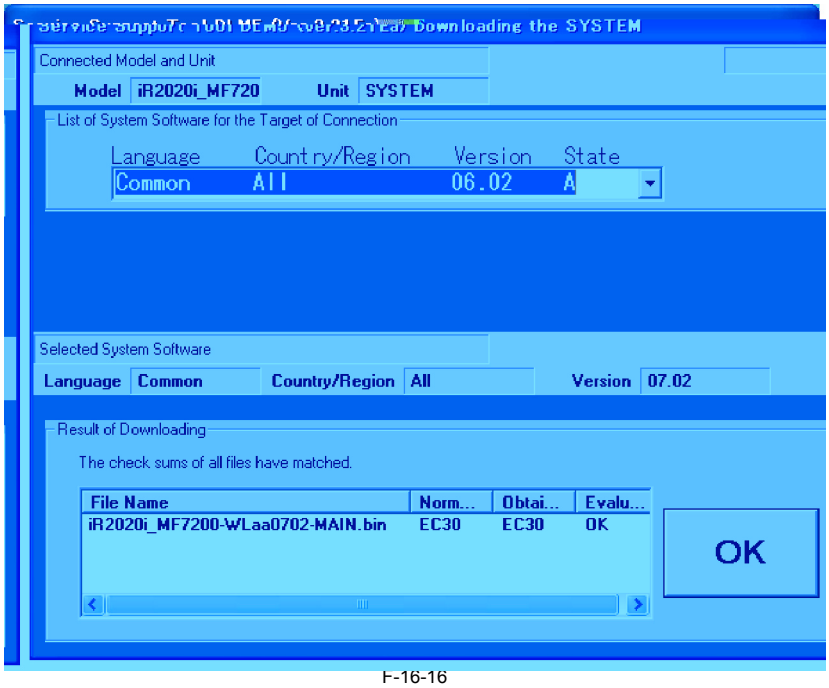


F-16-15

⚠

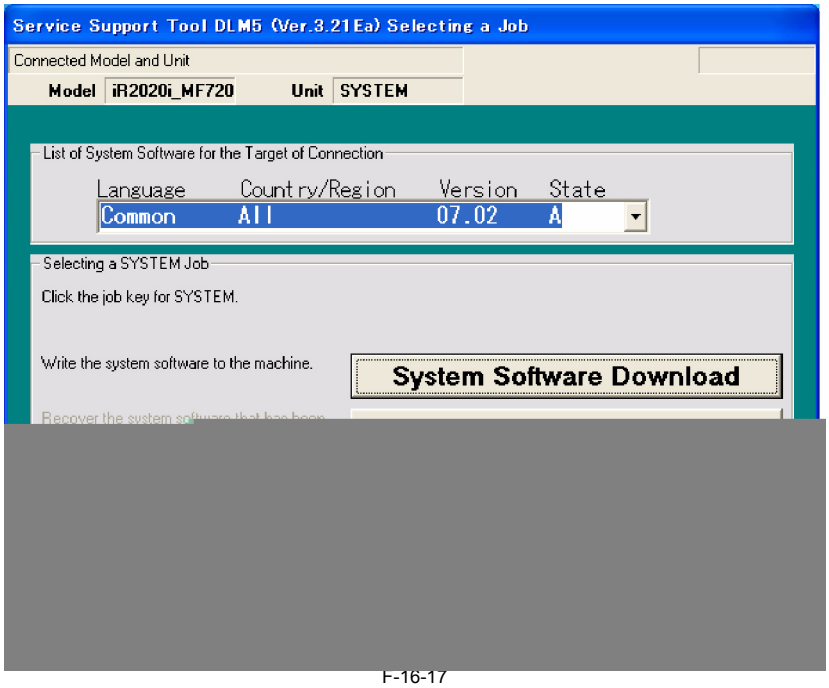
Never turn off the power switch of the machine while the data is being written to the flash ROM. If it becomes impossible to start this machine after turning its power switch off, the image processor PCB must be replaced.

15) When writing of the data to the Flash ROM is complete, its result is displayed. Click the OK button.



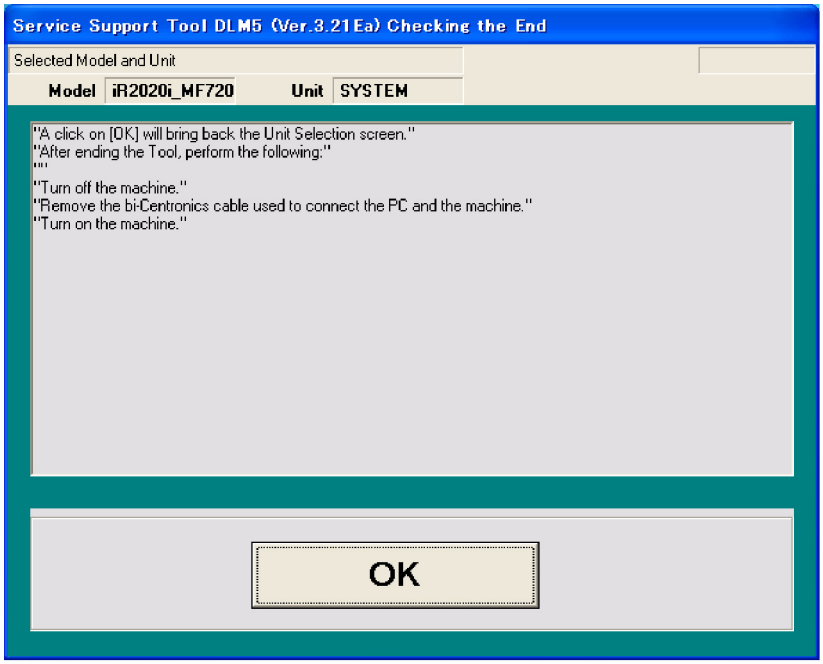
F-16-16

16) When the Selecting a Job screen appears, click "Return to Main Menu".



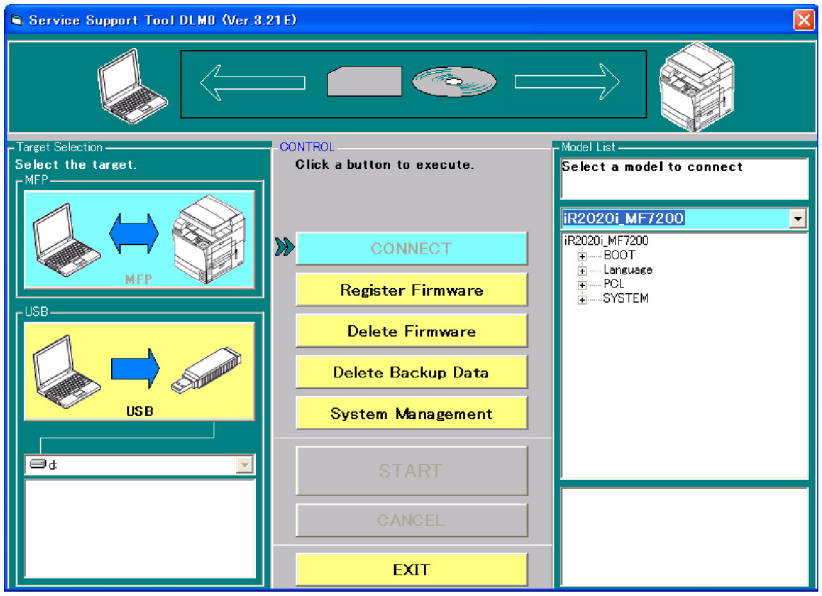
F-16-17

17) Click the "OK" button to return to the menu screen of SST.



F-16-18

18) If the other firmware is upgraded continuously, follow each downloading procedure. If the downloading is finished, click the "Exit" button and turn OFF/ON the main power switch.



F-16-19

16.3.2 Downloading the Boot Software

16.3.2.1 Downloading Procedure

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

To download the boot software, use the steps given for the system software.

16.3.3 Downloading the Language Module

16.3.3.1 Downloading Procedure

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

To download the language software, use the steps given for the system software.

16.3.4 Otehr Upgrade Methods

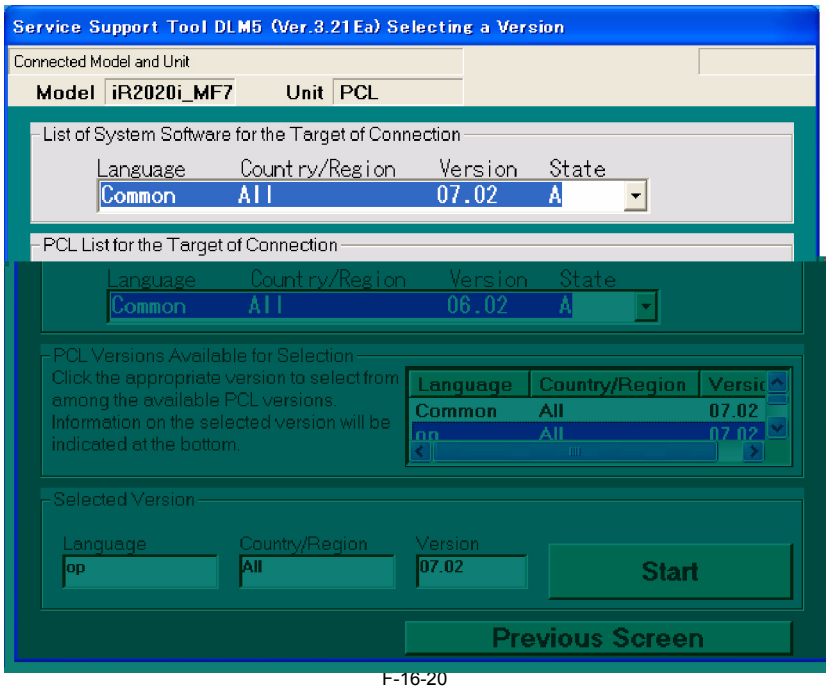
16.3.4.1 Downloading the PCL Software

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

To download the software for 16MB ROM PCB (Network/PCL standard equipment model only), use the steps given for the system software.

When selecting a download version on the following screen, be sure to select the 16MB ROM version.

	Language	Country/Region
Version for 32MB ROM	Common	All
Version for 16MB ROM	op	All



F-16-20

16.3.4.2 Downloading the CA certificate

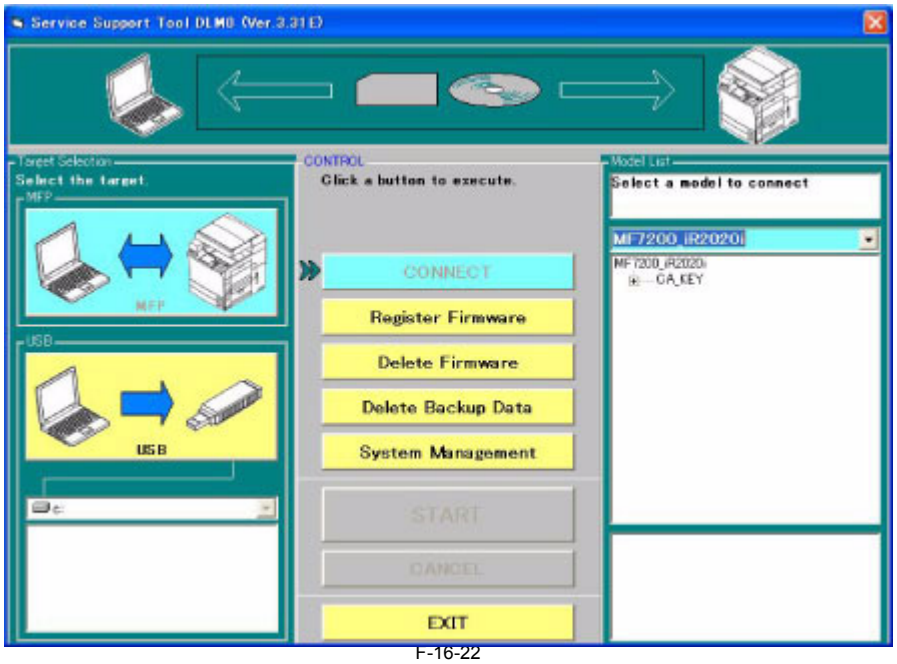
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

- Unless you want to change the CA certificate stored on your computer, your CA certificate will be released and there is usually no need to download it.
- The default CA certificate is maintained within the system software and can be activated by executing Service Mode>#CLAER>CA-KEY and turning the power OFF/ON, so there is no need to download it again.
- If you have updated your system software, make sure to perform the following procedure to activate the CA certificate in the updated system software.
 <Procedure> Execute Service Mode>#CLAER>CA-KEY and turn the power OFF/ON
- If you download a new CA certificate, you do not need to delete the old certificate stored on your computer; simply download as described below.

<Downloading Procedure>
1) Turn on the power switch of the PC and start SST.
2) When the power switch is turned on, the Found New hardware Wizard appears. Click "Cancel".

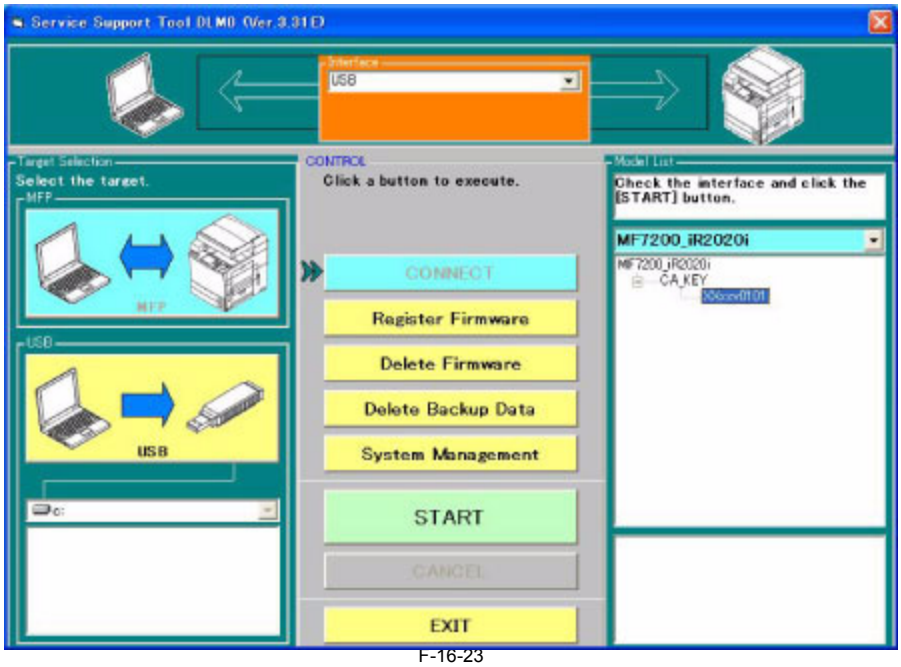
F-16-21

3) Select "MFP" in "Target Selection", and then select "iR2018i" in "Model List".



F-16-22

4) Double click the "CA-KEY" folder in "Model List" to confirm the version of the CA certificate. Select "USB" in "Interface", and then click the "START" button.

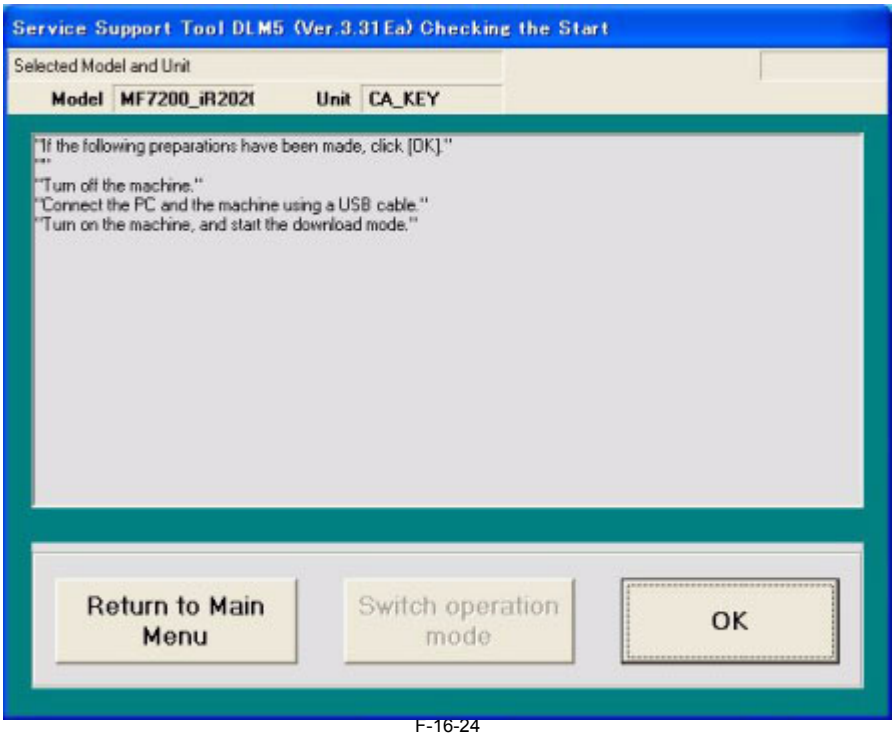


F-16-23

5) Turn on the power switch of the host machine.
6) Press the following keys on the control panel to enter the service mode.

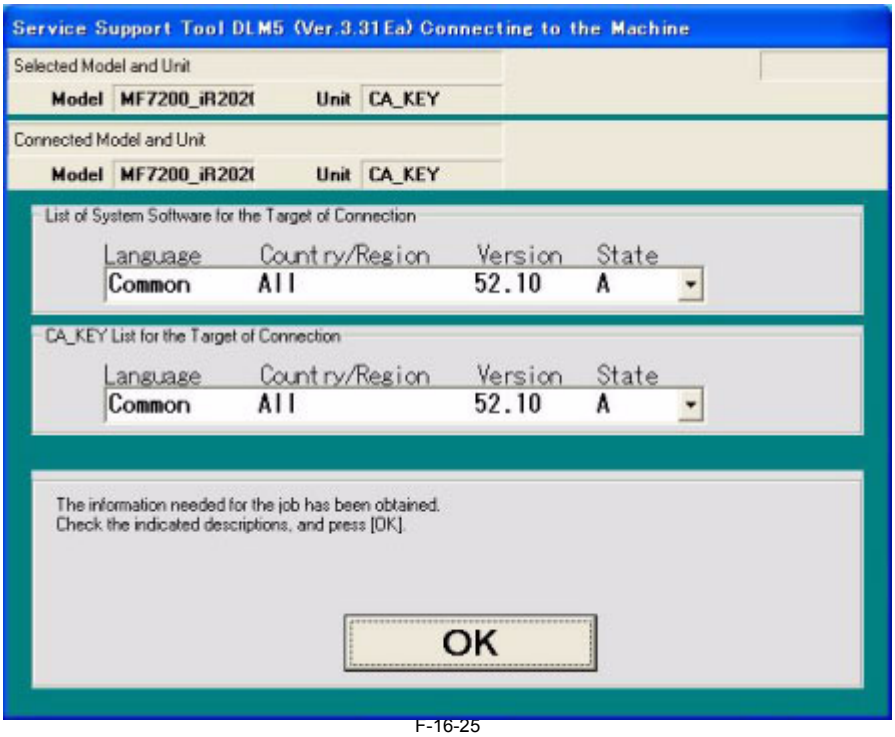
Ⓐ > 2 Key > 8 Key > Ⓐ

7) Using ◀ or ▶, select "#DOWNLOAD".
8) Press the OK key on the control panel to place the host machine in the downloading wait mode (No indicated on LCD).
9) Press the OK button on the SST screen displayed on the display of the PC.



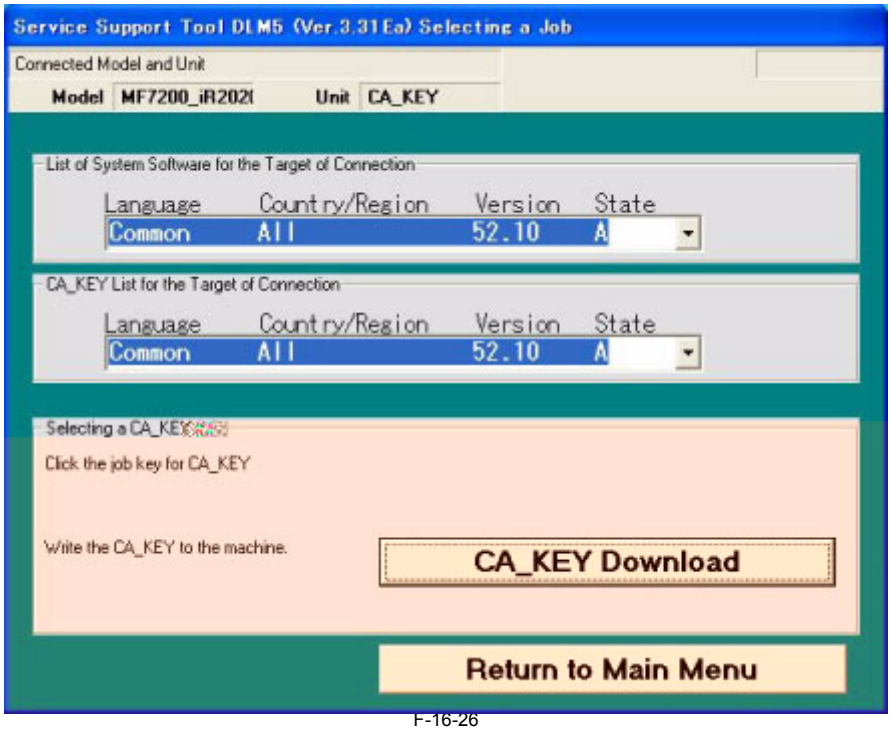
F-16-24

10) When connection is complete, the following screen appears. Click the OK button.



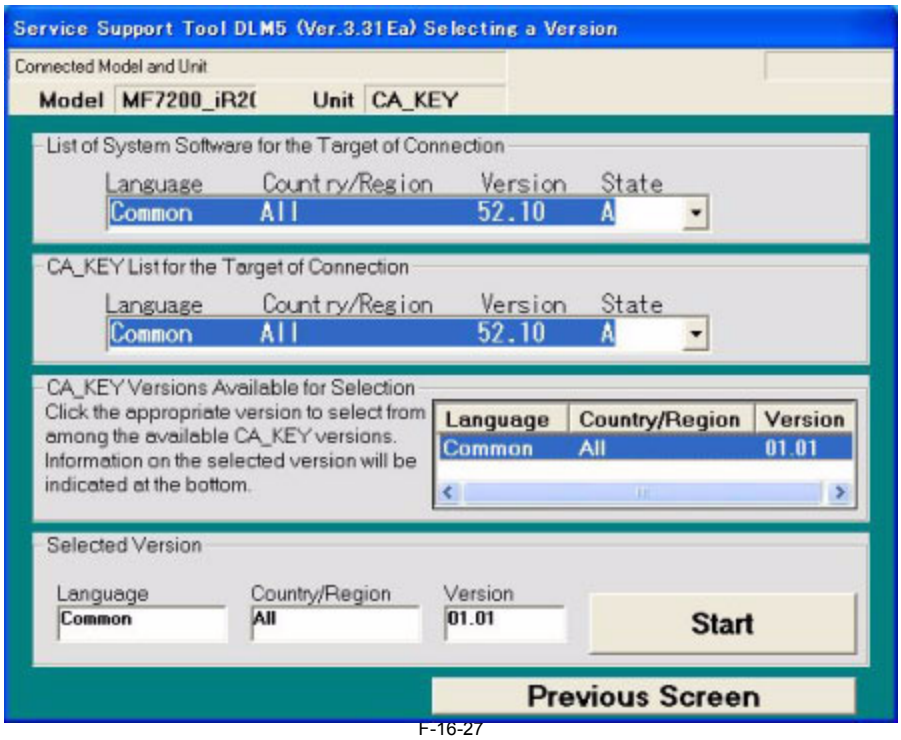
F-16-25

11) Click "CA_KET Download" on the Selecting a Job screen.



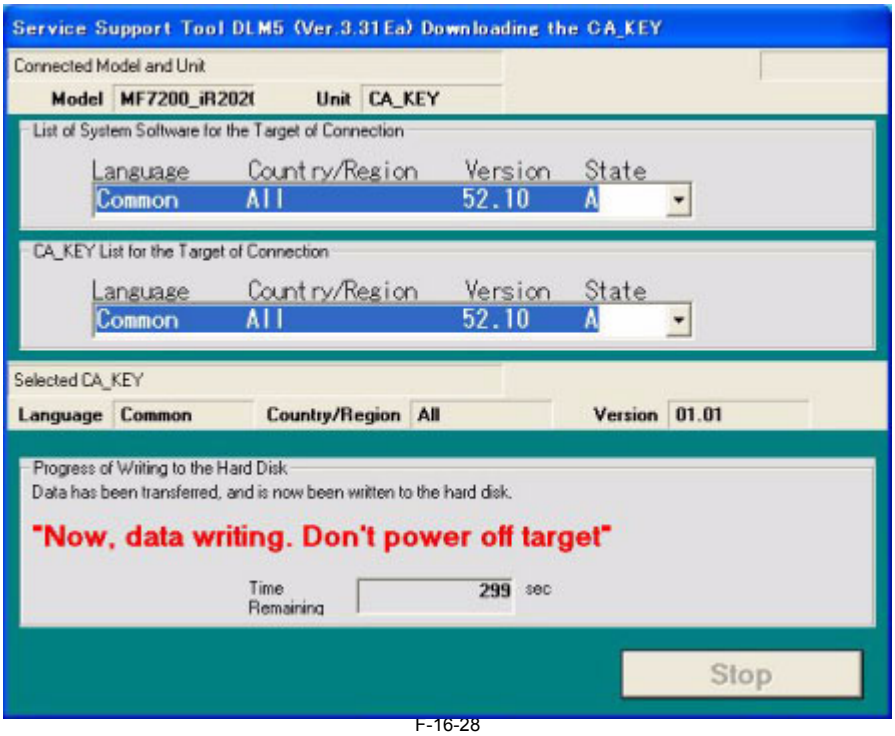
F-16-26

12) Select the version of the system software to download from the list. Check that the selected version is displayed in "Selected Version", and then click the "START" button.



F-16-27

13) When downloading starts, the progress of downloading is displayed by the progress bar.

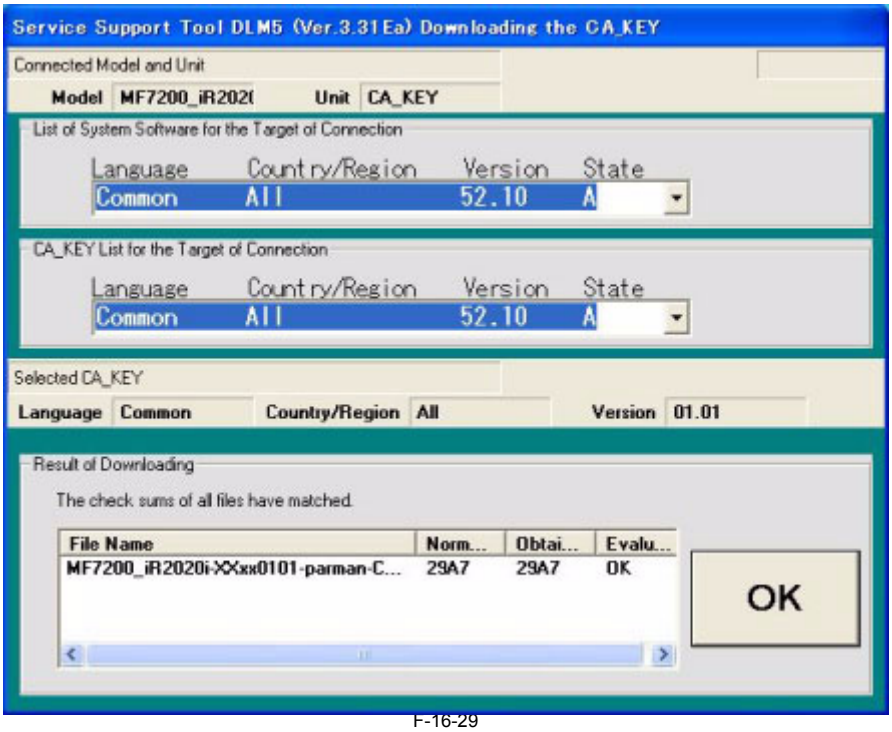


F-16-28

⚠

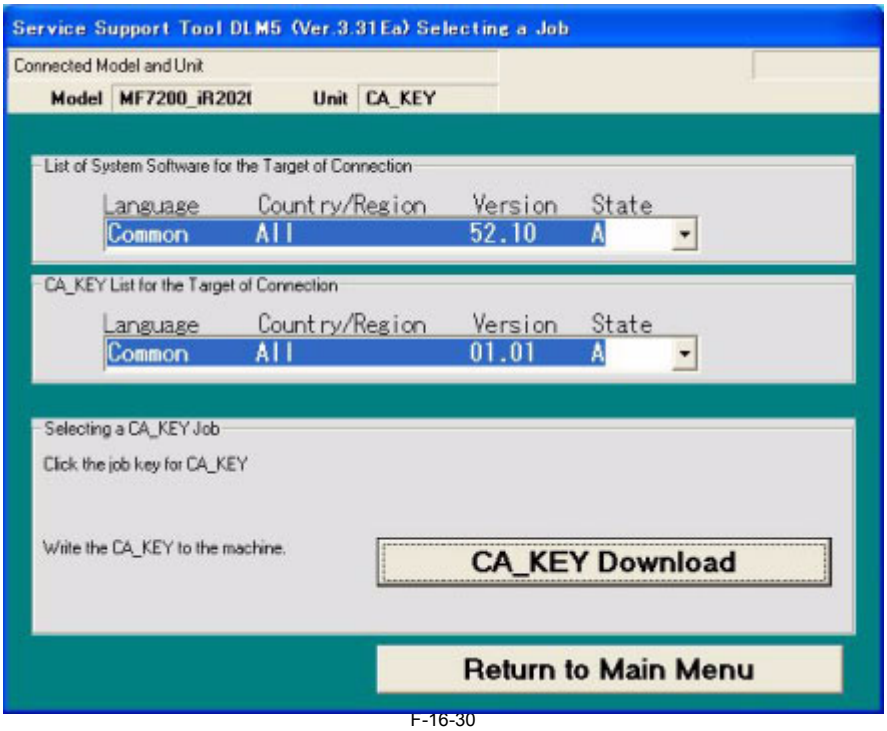
Never turn off the power switch of the machine while the data is being written to the flash ROM. If it becomes impossible to start this machine after turning its power switch off, the image processor PCB must be replaced.

14) When writing of the data to the Flash ROM is complete, its result is displayed. Click the OK button.



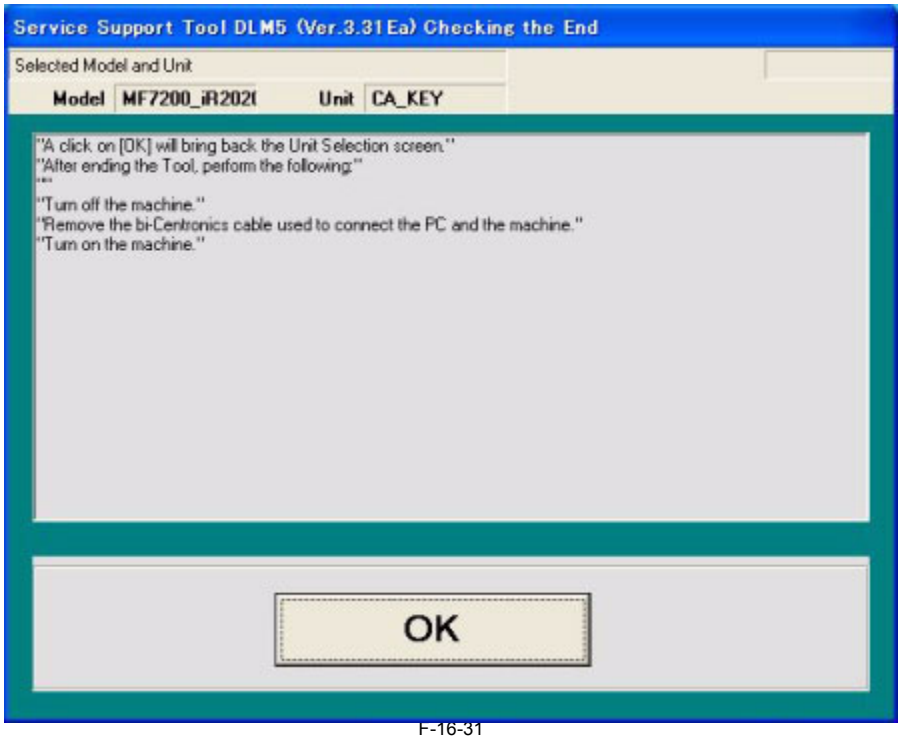
F-16-29

15) When the Selecting a Job screen appears, click "Return to Main Menu".



F-16-30

16) Click the "OK" button to return to the menu screen of SST.



F-16-31

17) In Service Mode, open #NETWORK > #CERTIFICATE > #CA-CERTIFICATE and check if the information recorded there is the same as the CA certificate you downloaded.

Chapter 17 Service Tools

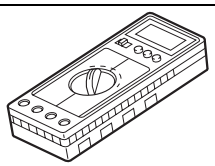
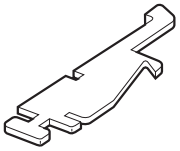
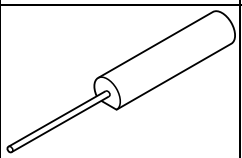
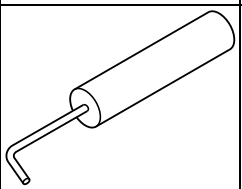
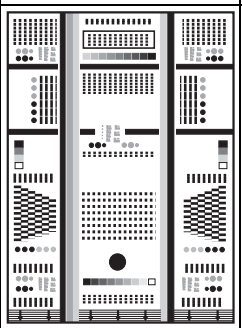
Contents

17.1 Service Tools

17.1.1 Special Tools

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

In addition to the standard tools set, you will need the following special tools for servicing of the machine:

Tool name	Tool No.	Rank	Shape	Uses
Digital multimeter	FY9-2002	A		For making electrical checks.
Cover switch	TKN-0093	A		
Tester extension pin	FY9-3038	A		As an addition when making an electrical check.
Tester extension pin (L-shipped)	FY9-3039	A		As an addition when making an electrical check.
NA-3 Test Chart	FY9-9196	A		For checking and adjusting images.

Key to Notation (rank)
A: each service engineer is expected to carry one.
B: each group of 5 service engineers is expected to carry one.
C: each workshop is expected to carry one.

17.1.2 Oils and Solvents

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-17-1

Name	Uses	Composition	Remarks
Alcohol	cleaning; e.g., glass, plastic, rubber; external covers	fluoride-family hydrocarbon alcohol surface activating agent water	- Do not bring near fire. - Procure locally. - IPA (isopropyl alcohol) may be substituted.
Solvent	cleaning; e.g., metal; soiling with oil or toner	fluorine-family hydrocarbon chlorine-family hydrocarbon alcohol	- Do not bring near fire. - Procure locally. - MEK may be substituted.

17.1.2 Oils and Solvents

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

T-17-1

Name	Uses	Composition	Remarks
Alcohol	cleaning; e.g., glass, plastic, rubber; external covers	fluoride-family hydrocarbon alcohol surface activating agent water	- Do not bring near fire. - Procure locally. - IPA (isopropyl alcohol) may be substituted.
Solvent	cleaning; e.g., metal; soiling with oil or toner	fluorine-family hydrocarbon chlorine-family hydrocarbon alcohol	- Do not bring near fire. - Procure locally. - MEK may be substituted.
Lubricant		mineral oil (paraffin family)	- CK-0524 (100 cc)
Lubricant	drive mechanism, sliding mechanism, scanner rail	silicone oil	- CK-0551 (20 g)
Lubricant (EM-50L)	gear	special oil special solid lubricating agent lithium soap	- HY9-0007

APPENDIX

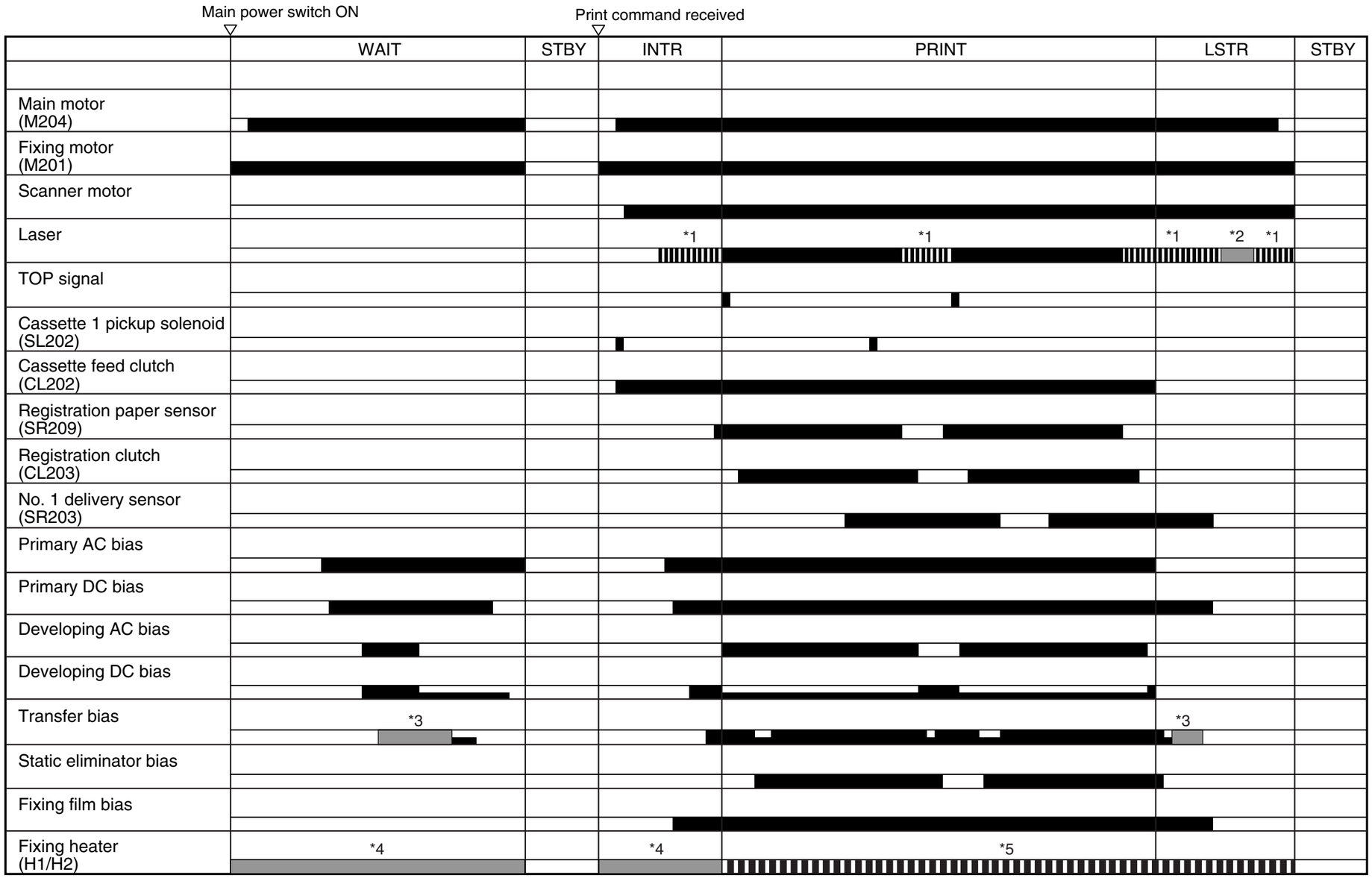
Contents

1 General Timing Chart

At Time of Printing

imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480

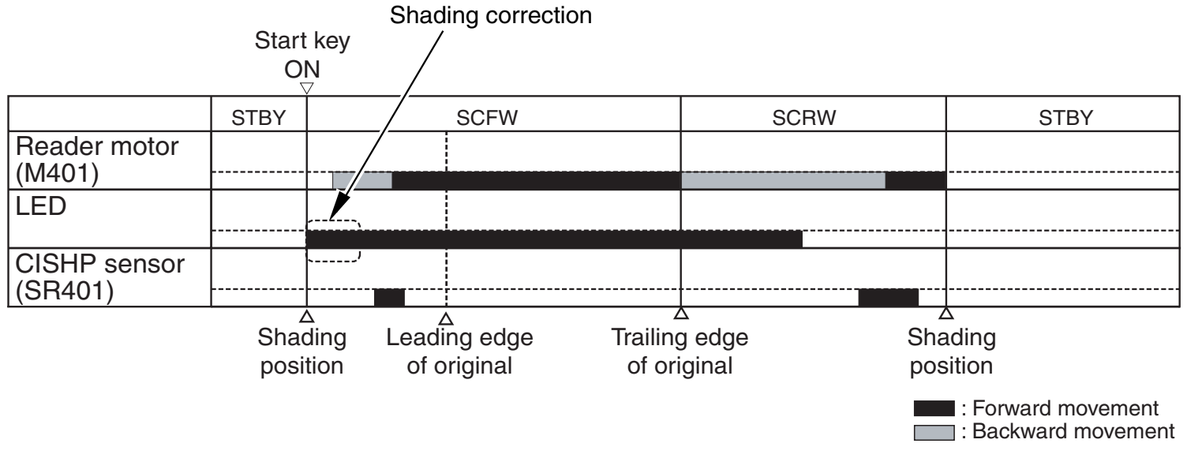
2 Prints, Continuous, Cassette 1



*1: Horizontal synchronization control
*2: Automatic photocurrent control (APC)
*3: Cleaning bias
*4: Target temperature control
*5: Temperature control in accordance with the fixing mode

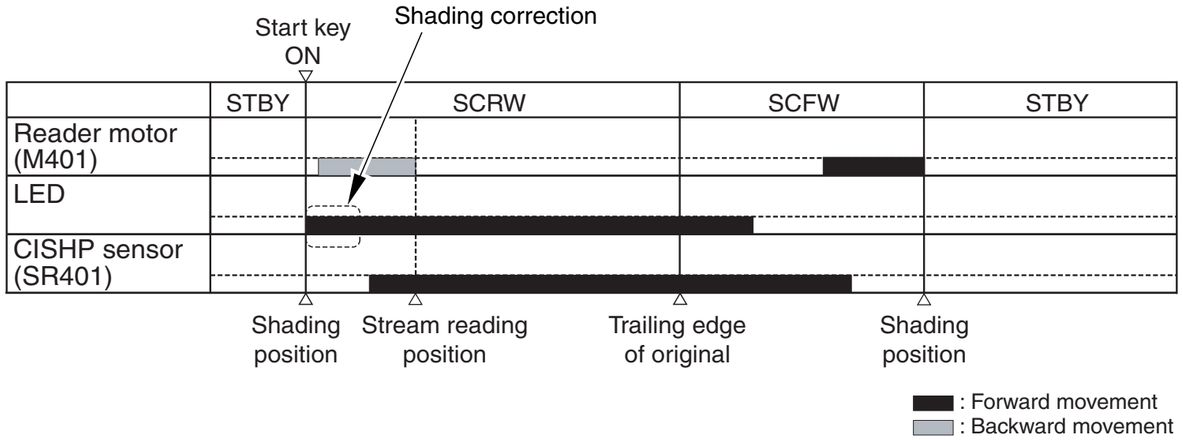
F-1-1

Basic Sequence of Operation (in response to a press on the start key; book mode; 1 original)



F-1-2

Basic Secure of Operation (in response to a press on the start key; ADF mode, 1 original)

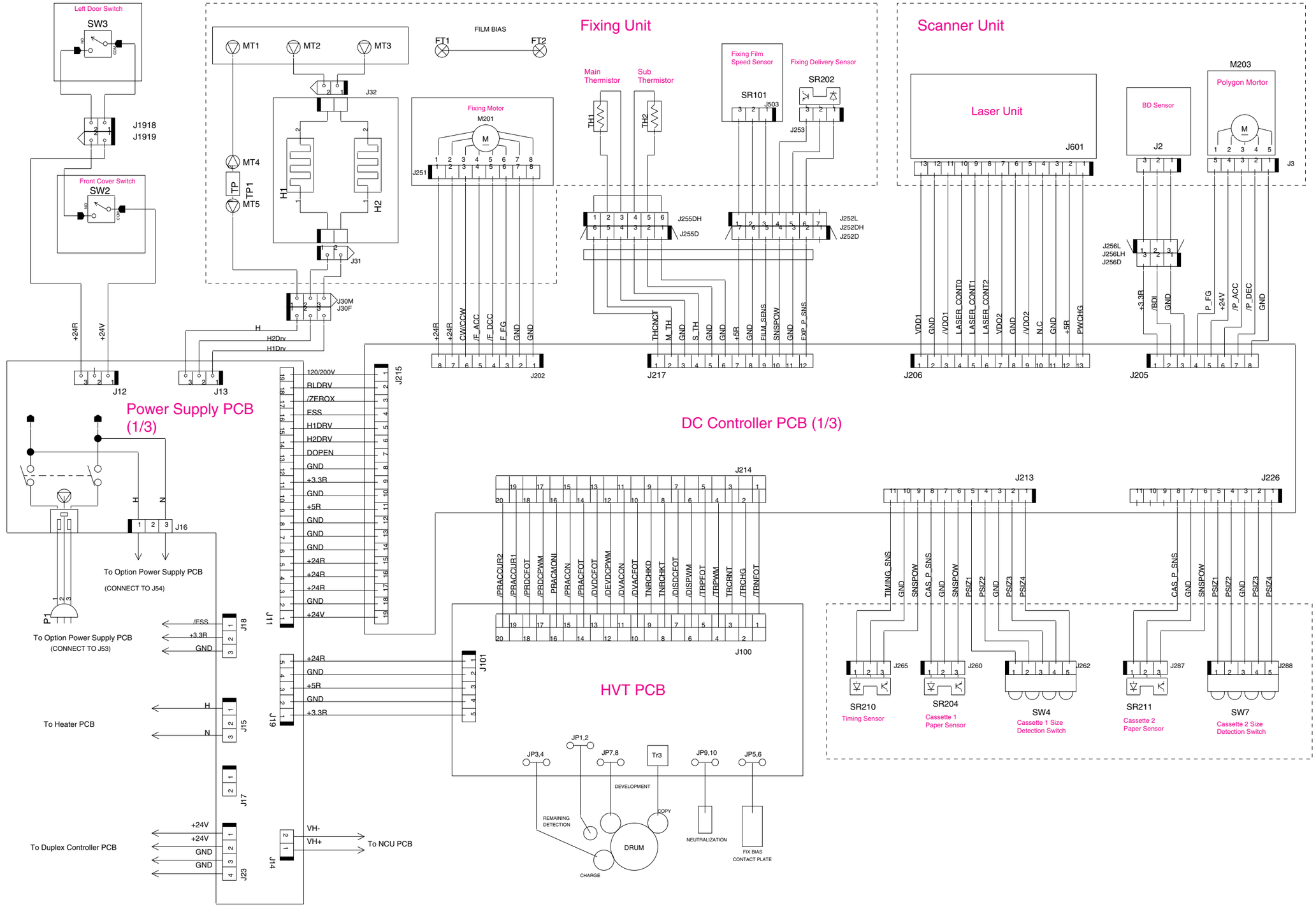


F-1-3

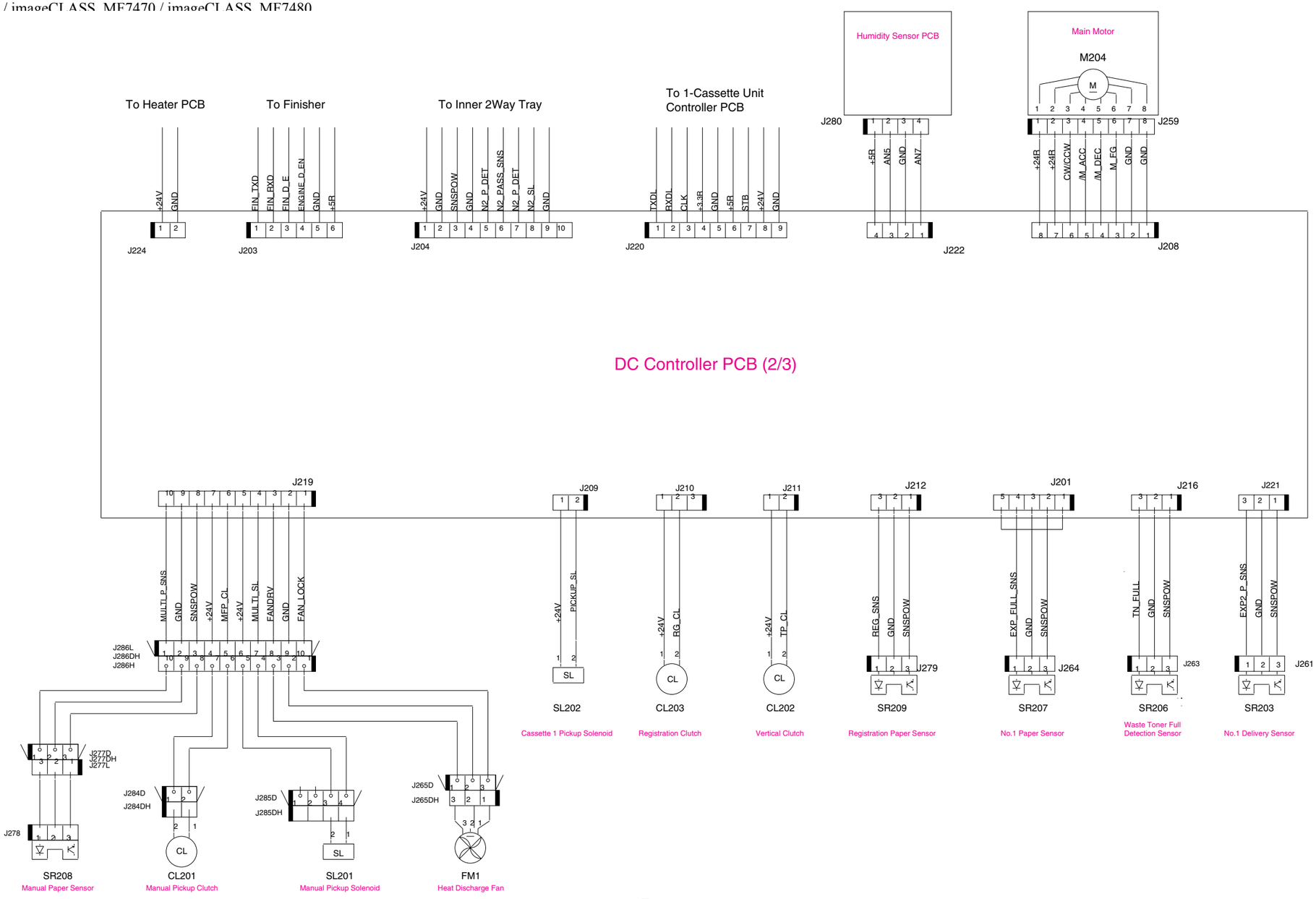
2 General Circuit Diagram

General Circuit Diagram 1

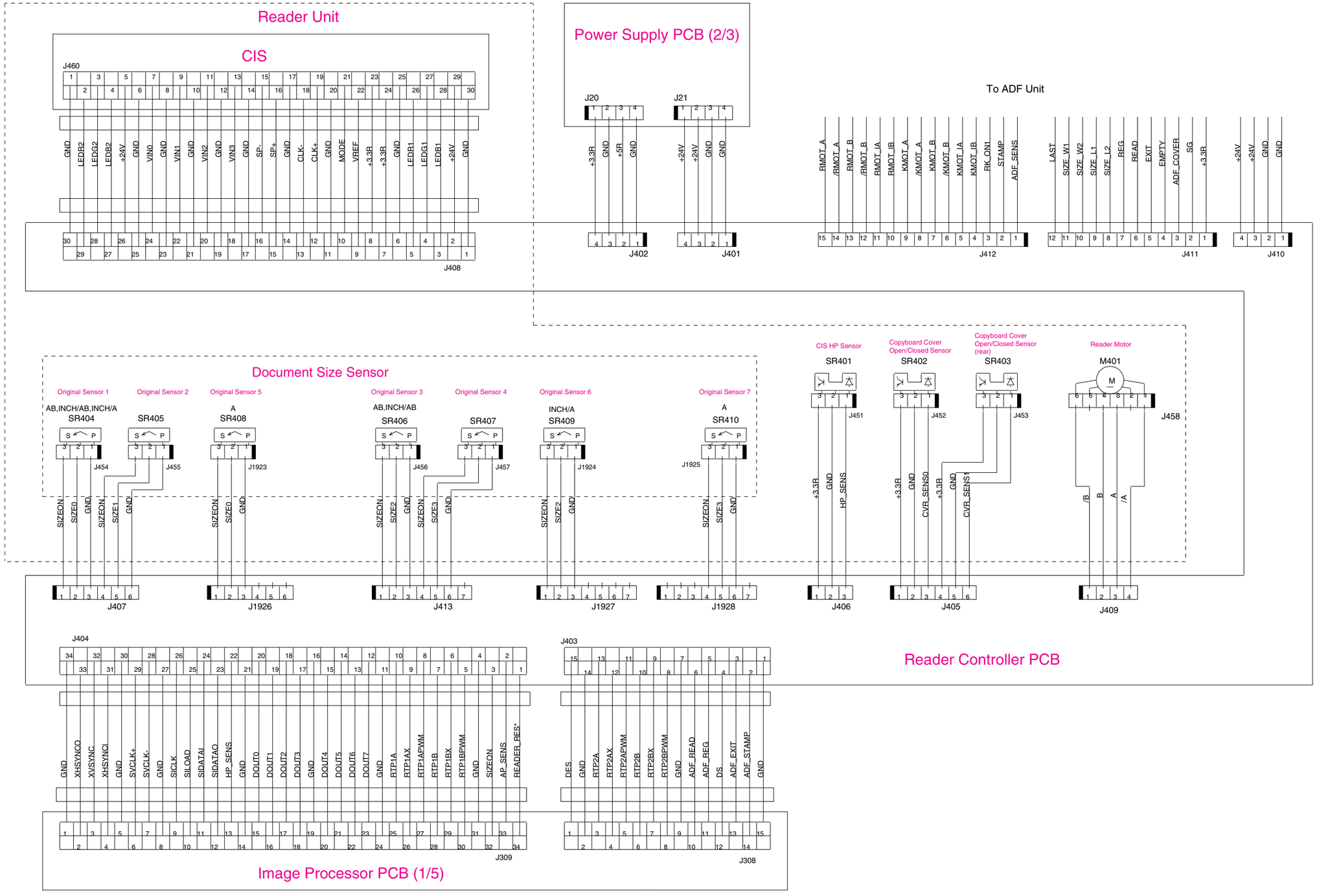
imageCLASS MF7460 / imageCLASS MF7470 / imageCLASS MF7480



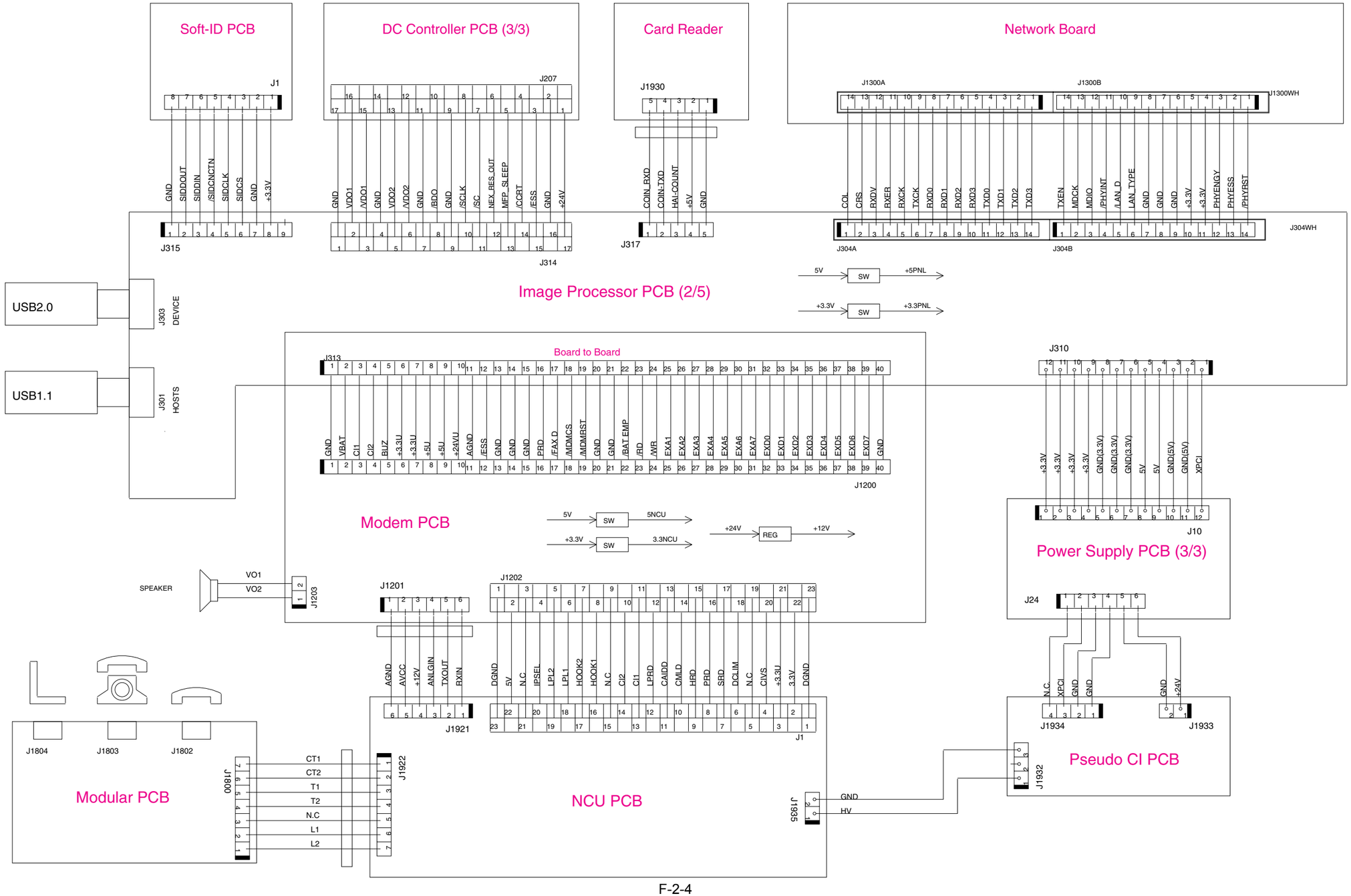
F-2-1


To Heater PCB
To Finisher
To Inner 2Way Tray
To 1-Cassette Unit Controller PCB
Humidity Sensor PCB
Main Motor
M204
J224
J203
J204
J220
J280
J222
J259
J208
+24V
GND
FIN_TXD
FIN_RXD
FIN_D_F
ENGINE_D_EN
+5R
SNSPOW
N2_P_DET
N2_PASS_SNS
N2_SL
TXDL
RXDL
CLK
+3.3R
STB
AN5
AN7
CW/CCW
/M_ACC
/M_DEC
M_FG
DC Controller PCB (2/3)
J219
J209
J210
J211
J212
J201
J216
J221
MULTI_P_SNS
MULTI_SL
FANDRV
FAN_LOCK
PICKUP_SL
RG_CL
TP_CL
REG_SNS
EXP_FULL_SNS
TN_FULL
EXP2_P_SNS
J286L
J286DH
J286H
J277D
J277DH
J277L
J278
J284D
J284DH
J285D
J285DH
J265D
J265DH
J279
J264
J263
J261
SL202
CL203
CL202
SR209
SR207
SR206
SR203
SR208
CL201
SL201
FM1
Cassette 1 Pickup Solenoid
Registration Clutch
Vertical Clutch
Registration Paper Sensor
No.1 Paper Sensor
Waste Toner Full Detection Sensor
No.1 Delivery Sensor
Manual Paper Sensor
Manual Pickup Clutch
Manual Pickup Solenoid
Heat Discharge Fan

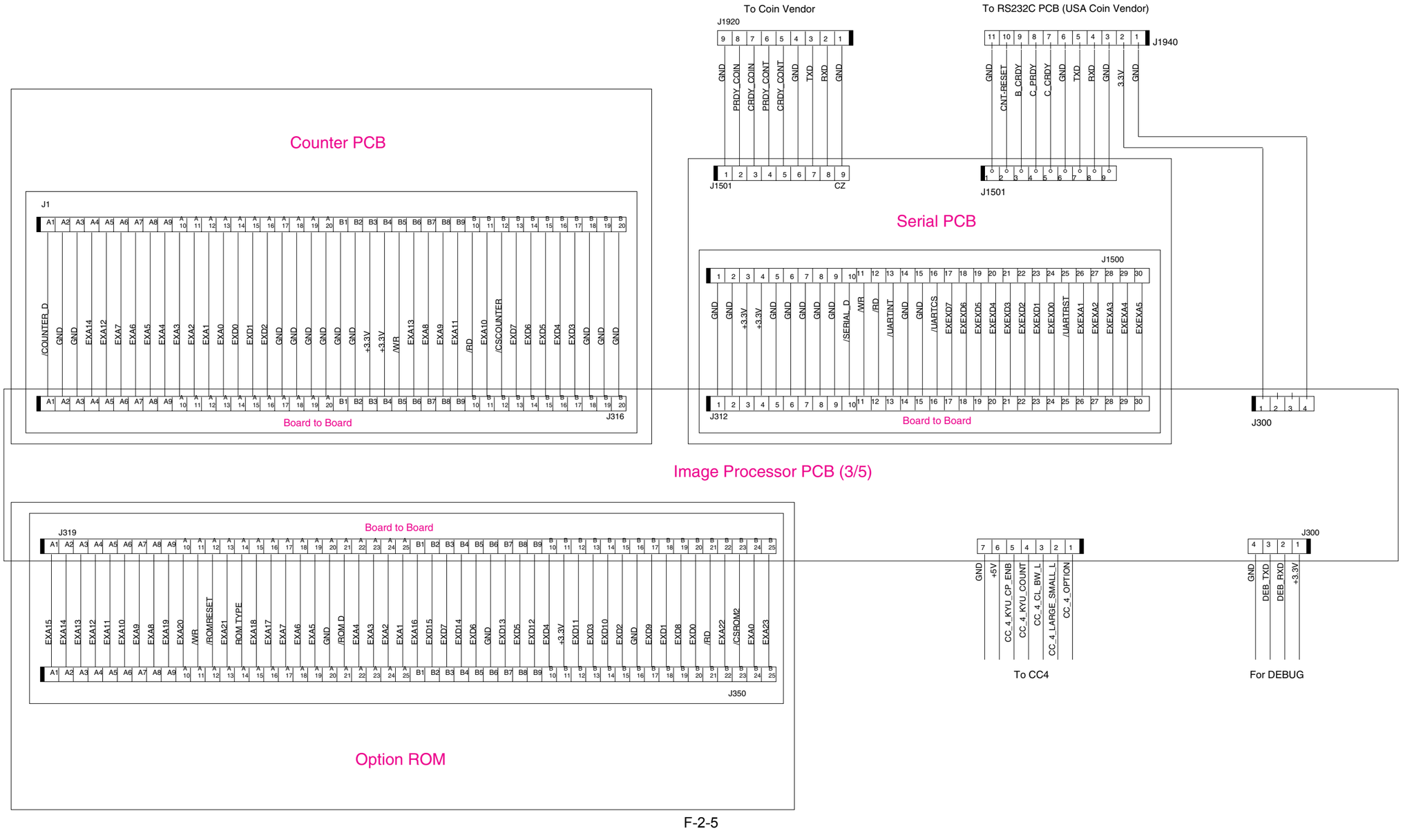
F-2-2


Reader Unit
CIS
J460
GND LEDB2 LEDG2 LEDB2 +24V GND VIN0 GND VIN1 GND VIN2 GND VIN3 GND SP- SP+ GND CLK- CLK+ GND MODE VREF +3.3R +3.3R GND LEDR1 LEDG1 LEDB1 +24V GND
J408
Power Supply PCB (2/3)
J20
+3.3R GND +5R GND
J402
J21
+24V +24V GND GND
J401
To ADF Unit
RMOT_A /RMOT_A RMOT_B /RMOT_B RMOT_IA RMOT_IB KMOT_A /KMOT_A KMOT_B /KMOT_B KMOT_IA KMOT_IB RK_ON1 STAMP ADF_SENS
J412
LAST SIZE_W1 SIZE_W2 SIZE_L1 SIZE_L2 REG READ EXIT EMPTY ADF_COVER SG +3.3R
J411
+24V +24V GND GND
J410
Document Size Sensor
Original Sensor 1
AB,INCH/AB,INCH/A
SR404
J454
SIZE0N SIZE0 GND SIZE1N SIZE1 GND
J407
Original Sensor 2
SR405
J455
Original Sensor 5
A
SR408
J1923
SIZE0N SIZE0 GND
J1926
Original Sensor 3
AB,INCH/AB
SR406
J456
SIZE2N SIZE2 GND SIZE3N SIZE3 GND
J413
Original Sensor 4
SR407
J457
Original Sensor 6
INCH/A
SR409
J1924
SIZE2N SIZE2 GND
J1927
Original Sensor 7
A
SR410
J1925
SIZE3N SIZE3 GND
J1928
CIS HP Sensor
SR401
J451
+3.3R GND HP_SENS
J406
Copyboard Cover Open/Closed Sensor
SR402
J452
Copyboard Cover Open/Closed Sensor (rear)
SR403
J453
+3.3R GND CVR_SENS0 +3.3R GND CVR_SENS1
J405
Reader Motor
M401
J458
/B B A /A
J409
Reader Controller PCB
J404
GND XHSYNCO XVSYNC XHSYNCI GND SVCLK+ SVCLK- GND SICLK SILOAD SIDATAI SIDATAO HP_SENS GND DOUT0 DOUT1 DOUT2 DOUT3 GND DOUT4 DOUT5 DOUT6 DOUT7 GND RTP1A RTP1AX RTP1APWM RTP1B RTP1BX RTP1BPWM GND SIZEON AP_SENS READER_RES*
J309
J403
DES GND RTP2A RTP2AX RTP2APWM RTP2B RTP2BX RTP2BPWM GND ADF_READ ADF_REG DS ADF_EXIT ADF_STAMP GND
J308
Image Processor PCB (1/5)

F-2-3

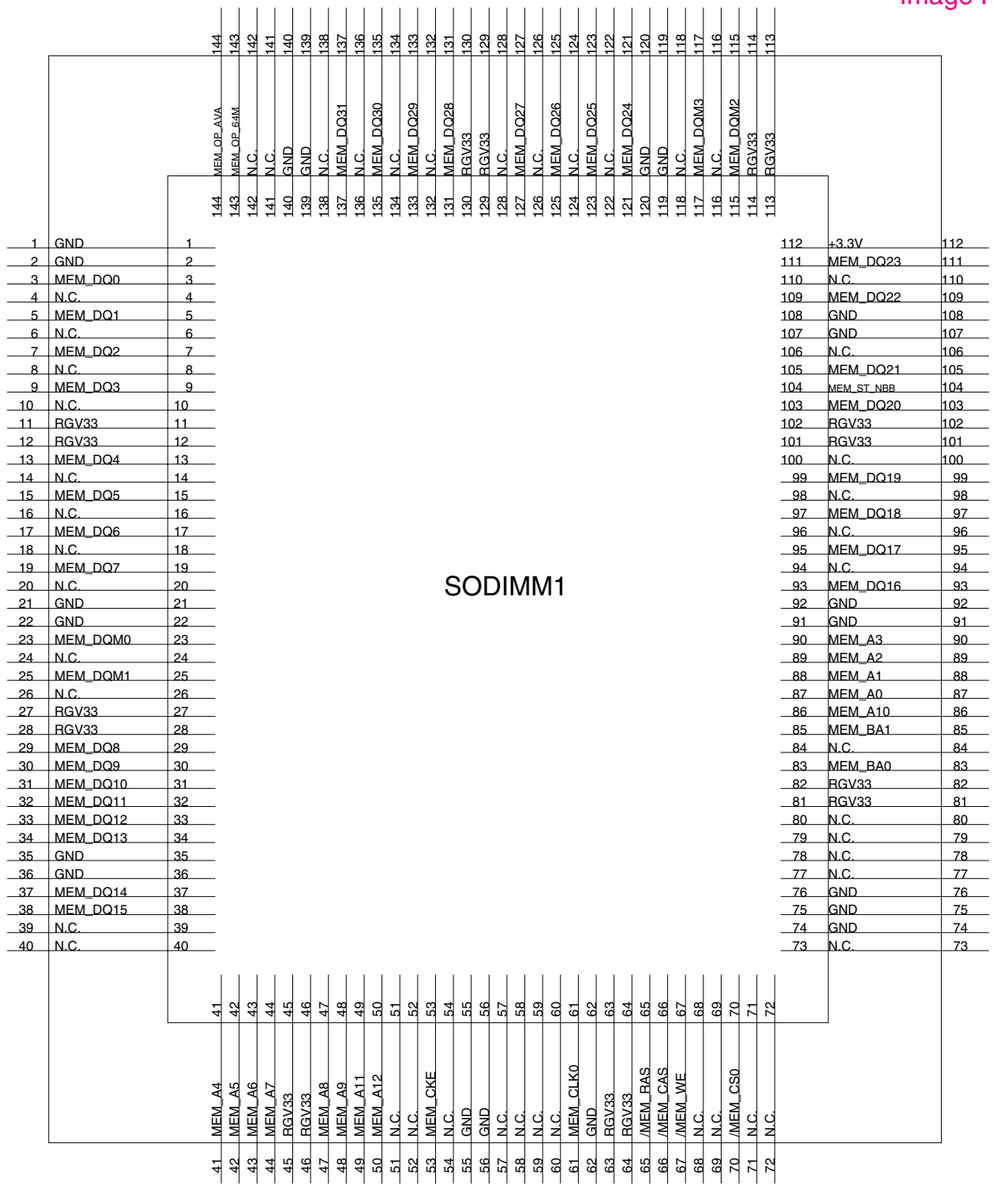

Soft-ID PCB
J1
GND
SIDDOUT
SIDDIN
/SIDCNCTN
SIDCLK
SIDCS
GND
+3.3V
J315
DC Controller PCB (3/3)
J207
GND
VDO1
/VDO1
GND
VDO2
/VDO2
GND
/BDO
GND
/SCLK
/SC
NEX_RES_OUT
MFP_SLEEP
/CCRT
/ESS
GND
+24V
J314
Card Reader
J1930
COIN_RXD
COIN-TXD
HAI-COUNT
+5V
GND
J317
Network Board
J1300A
J1300B
J1300WH
COL
CRS
RXDV
RXER
RXCK
TXCK
RXD0
RXD1
RXD2
RXD3
TXD0
TXD1
TXD2
TXD3
TXEN
MDCK
MDIO
/PHYINT
/LAN_D
LAN_TYPE
GND
GND
+3.3V
+3.3V
PHYENGY
PHYESS
/PHYRST
J304A
J304B
J304WH
Image Processor PCB (2/5)
5V
SW
+5PNL
+3.3V
SW
+3.3PNL
USB2.0
J303
DEVICE
USB1.1
J301
HOSTS
Board to Board
J313
GND
VBAT
CI1
CI2
BUZ
+3.3U
+3.3U
+5U
+5U
+24VU
AGND
/ESS
GND
GND
GND
PRD
/FAX_D
/MDMCS
/MDMRST
GND
GND
/BAT.EMP
/RD
/WR
EXA1
EXA2
EXA3
EXA4
EXA5
EXA6
EXA7
EXD0
EXD1
EXD2
EXD3
EXD4
EXD5
EXD6
EXD7
GND
J1200
J310
+3.3V
+3.3V
+3.3V
+3.3V
GND(3.3V)
GND(3.3V)
GND(3.3V)
5V
5V
GND(5V)
GND(5V)
XPCI
J10
Power Supply PCB (3/3)
J24
N.C
XPCI
GND
GND
GND
+24V
J1934
J1933
Modem PCB
5V
SW
5NCU
+3.3V
SW
3.3NCU
+24V
REG
+12V
SPEAKER
VO1
VO2
J1203
J1201
AGND
AVCC
+12V
ANLGIN
TXOUT
RXIN
J1921
J1202
DGND
5V
N.C
IPSEL
LPL2
LPL1
HOOK2
HOOK1
N.C
CI2
CI1
LPRD
CAIDD
CMLD
HRD
PRD
SRD
DCLIM
N.C
CIVS
+3.3U
3.3V
DGND
J1
J1804
J1803
J1802
Modular PCB
J1800
CT1
CT2
T1
T2
N.C
L1
L2
J1922
NCU PCB
J1935
GND
HV
J1932
Pseudo CI PCB

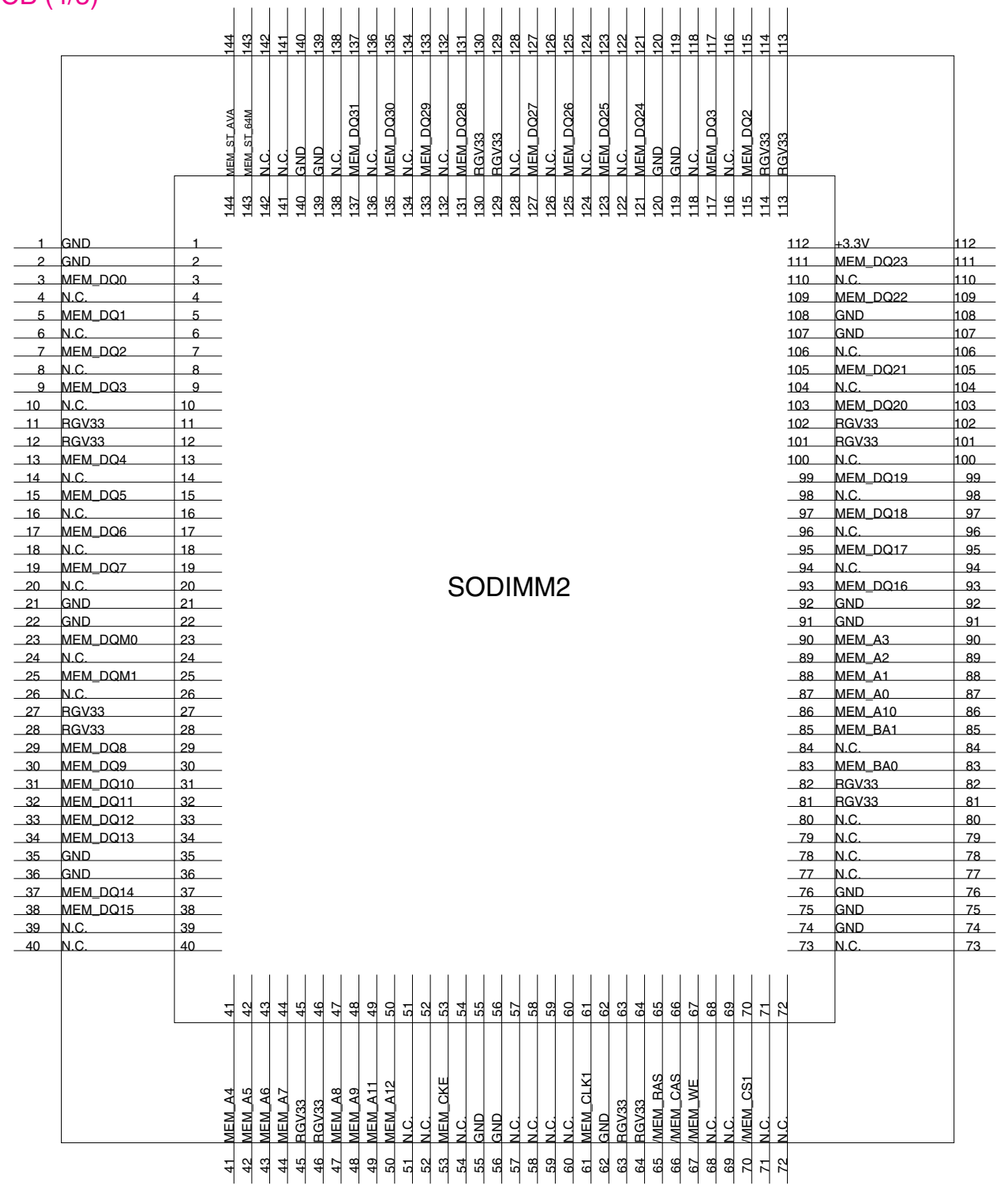
F-2-4


Counter PCB
J1
/COUNTER_D
GND
GND
EXA14
EXA12
EXA7
EXA6
EXA5
EXA4
EXA3
EXA2
EXA1
EXA0
EXD0
EXD1
EXD2
GND
GND
GND
GND
GND
+3.3V
+3.3V
/WR
EXA13
EXA8
EXA9
EXA11
/RD
EXA10
/CSCOUNTER
EXD7
EXD6
EXD5
EXD4
EXD3
GND
GND
GND
Board to Board
J316
To Coin Vendor
J1920
GND
PBDY_COIN
CRDY_COIN
PBDY_CONT
CRDY_CONT
GND
TXD
RXD
GND
J1501
CZ
To RS232C PCB (USA Coin Vendor)
J1940
GND
CNT-BESET
B_CRDY
C_PRDY
C_CRDY
GND
TXD
RXD
GND
3.3V
GND
J1501
Serial PCB
J1500
GND
GND
+3.3V
+3.3V
GND
GND
GND
GND
GND
/SERIAL_D
/WR
/RD
/UARTINT
GND
GND
/UARTCS
EXEXD7
EXEXD6
EXEXD5
EXEXD4
EXEXD3
EXEXD2
EXEXD1
EXEXD0
/UARTRST
EXEXA1
EXEXA2
EXEXA3
EXEXA4
EXEXA5
J312
Board to Board
J300
Image Processor PCB (3/5)
J319
Board to Board
EXA15
EXA14
EXA13
EXA12
EXA11
EXA10
EXA9
EXA8
EXA19
EXA20
/WR
/ROMRESET
EXA21
ROM_TYPE
EXA18
EXA17
EXA7
EXA6
EXA5
GND
/ROM_D
EXA4
EXA3
EXA2
EXA1
EXA16
EXD15
EXD7
EXD14
EXD6
GND
EXD13
EXD5
EXD12
EXD4
+3.3V
EXD11
EXD3
EXD10
EXD2
GND
EXD9
EXD1
EXD8
EXD0
/RD
EXA22
/CSROM2
EXA0
EXA23
J350
Option ROM
GND
+5V
CC_4_KYU_CP_ENB
CC_4_KYU_COUNT
CC_4_CL_BW_L
CC_4_LARGE_SMALL_L
CC_4_OPTION
To CC4
J300
GND
DEB_TXD
DEB_RXD
+3.3V
For DEBUG

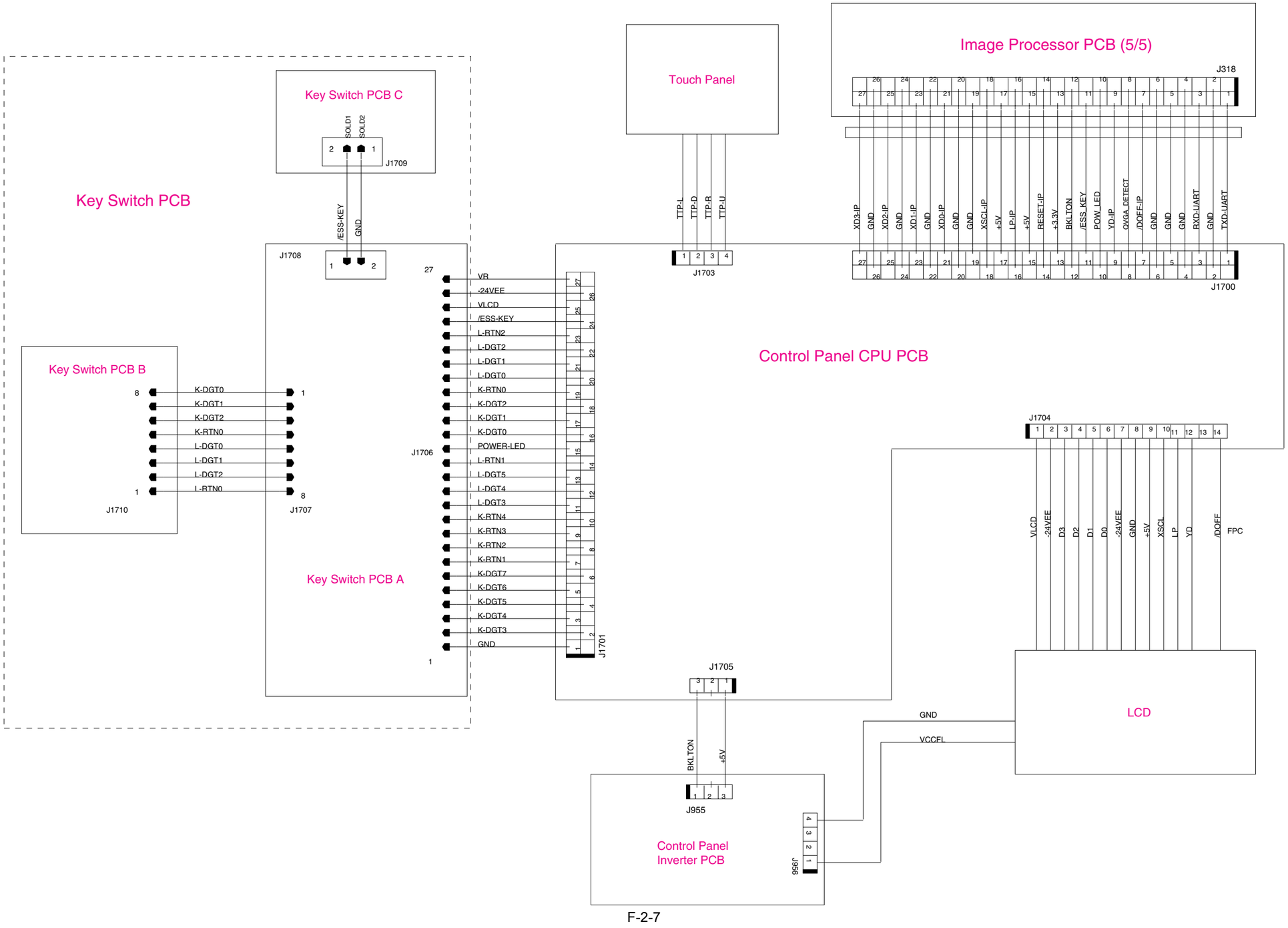
F-2-5

Image Processor PCB (4/5)

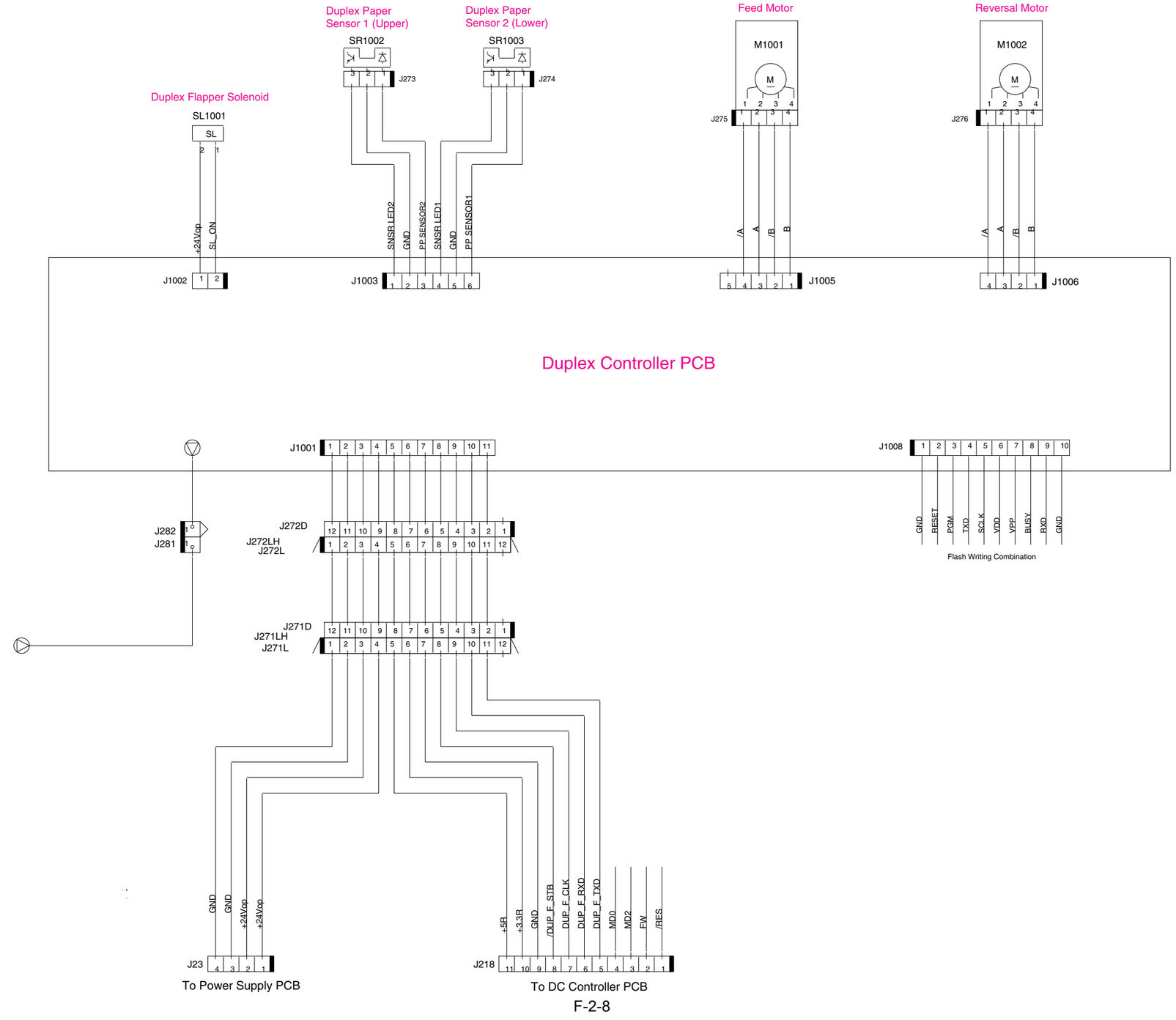




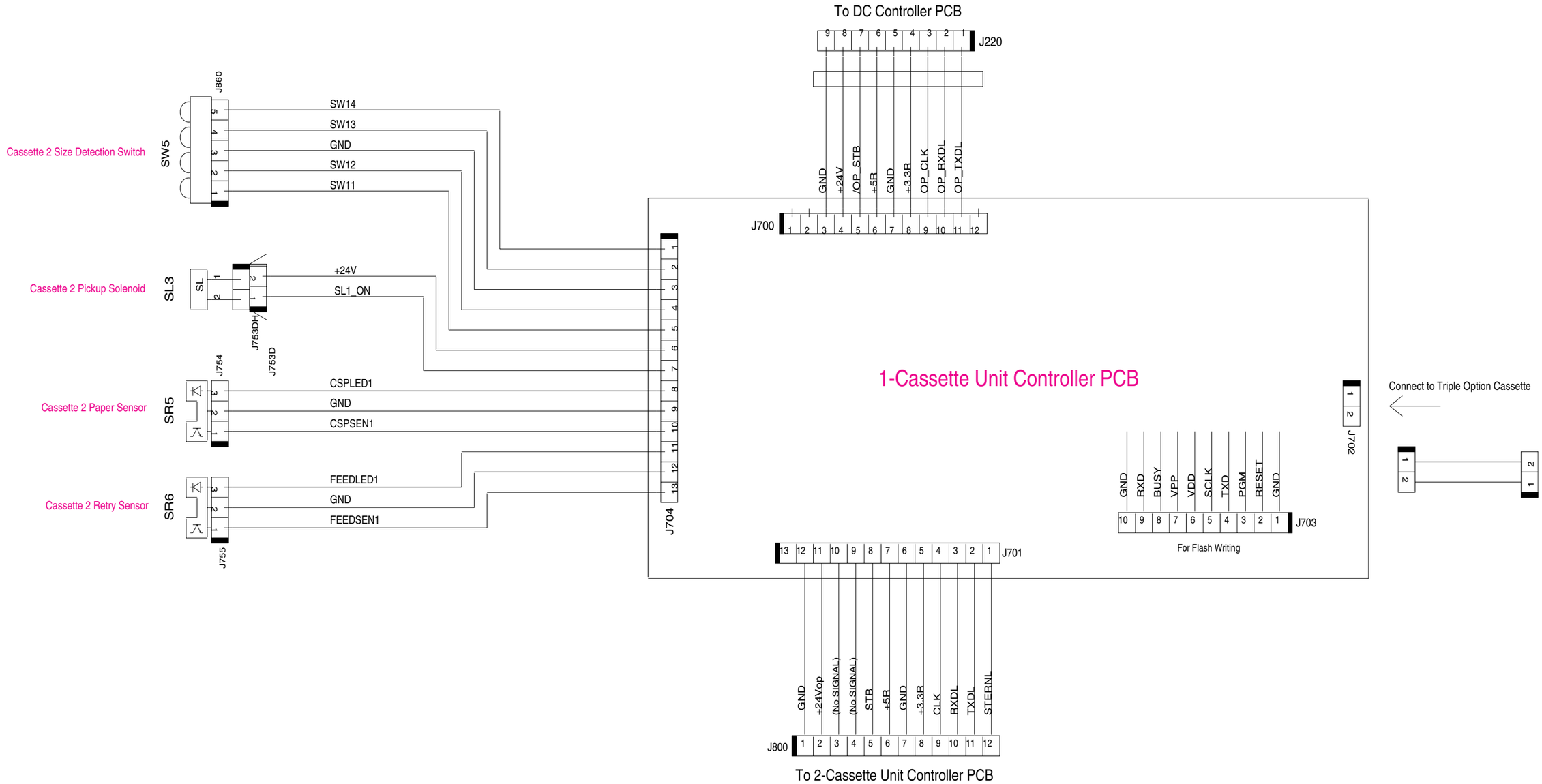
F-2-6


Key Switch PCB
Key Switch PCB C
SOLD1
SOLD2
J1709
/ESS-KEY
GND
J1708
Key Switch PCB B
K-DGT0
K-DGT1
K-DGT2
K-RTN0
L-DGT0
L-DGT1
L-DGT2
L-RTN0
J1710
J1707
Key Switch PCB A
J1706
VR
-24VEE
VLCD
/ESS-KEY
L-RTN2
L-DGT2
L-DGT1
L-DGT0
K-RTN0
K-DGT2
K-DGT1
K-DGT0
POWER-LED
L-RTN1
L-DGT5
L-DGT4
L-DGT3
K-RTN4
K-RTN3
K-RTN2
K-RTN1
K-DGT7
K-DGT6
K-DGT5
K-DGT4
K-DGT3
GND
J1701
Touch Panel
TTP-L
TTP-D
TTP-R
TTP-U
J1703
Image Processor PCB (5/5)
J318
XD3-IP
XD2-IP
XD1-IP
XD0-IP
XSCL-IP
+5V
LP-IP
RESET-IP
+3.3V
BKLTON
/ESS_KEY
POW_LED
YD-IP
QVGA_DETECT
/DOFF-IP
RXD-UART
TXD-UART
J1700
Control Panel CPU PCB
J1704
VLCD
-24VEE
D3
D2
D1
D0
-24VEE
GND
+5V
XSCL
LP
YD
/DOFF
FPC
LCD
J1705
BKLTON
+5V
J955
GND
VCCFL
Control Panel
Inverter PCB
J956

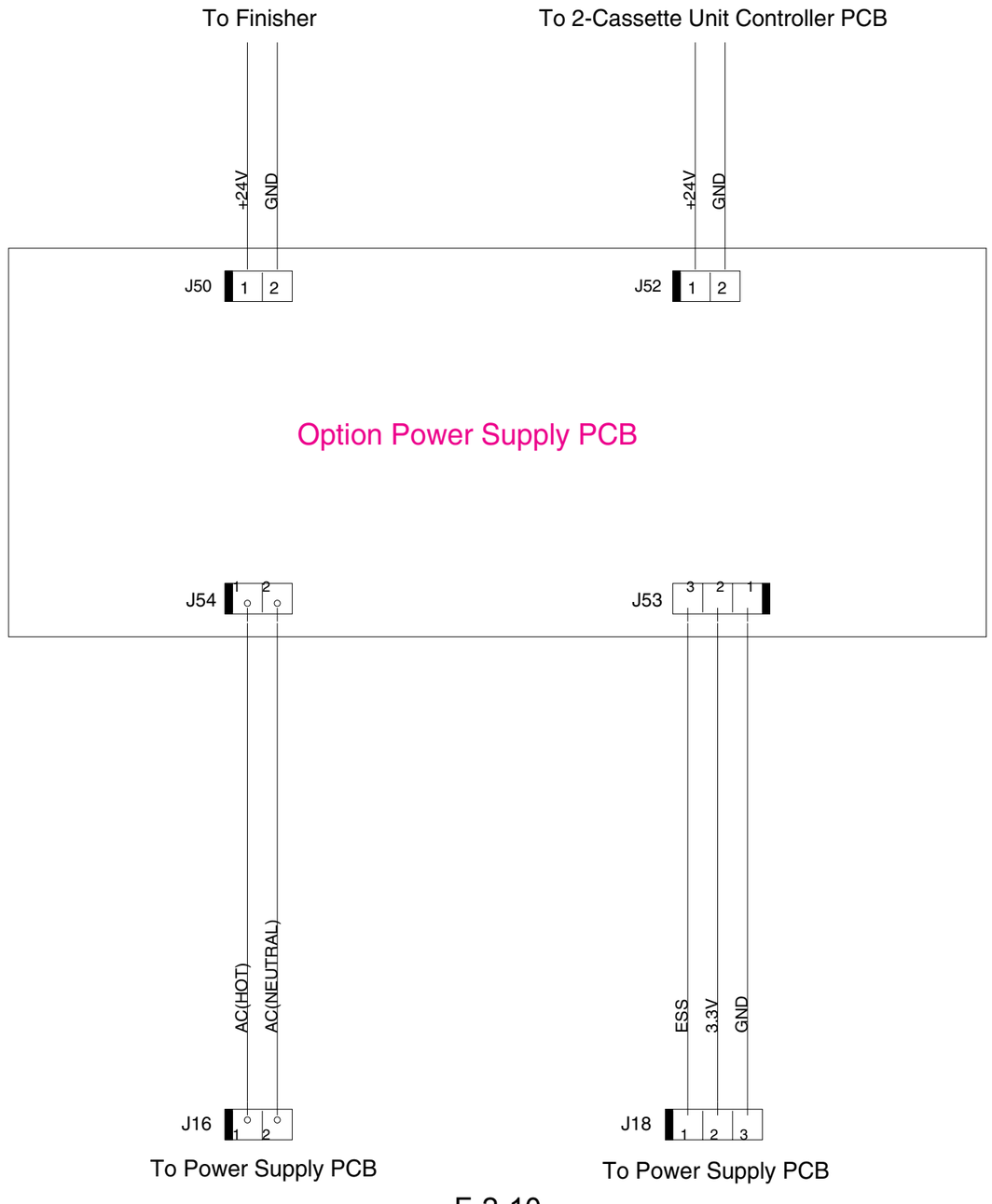
F-2-7


Duplex Paper Sensor 1 (Upper)
SR1002
J273
Duplex Paper Sensor 2 (Lower)
SR1003
J274
Feed Motor
M1001
J275
Reversal Motor
M1002
J276
Duplex Flapper Solenoid
SL1001
SL
+24Vop
SL_ON
J1002
SNSR LED2
GND
PP SENSOR2
SNSR LED1
GND
PP SENSOR1
J1003
/A
A
/B
B
J1005
J1006
Duplex Controller PCB
J1001
J1008
GND
RESET
PGM
TXD
SCLK
VDD
VPP
BUSY
RXD
GND
Flash Writing Combination
J282
J281
J272D
J272LH
J272L
J271D
J271LH
J271L
GND
GND
+24Vop
+24Vop
J23
To Power Supply PCB
+5R
+3.3R
GND
/DUP_F_STB
DUP_F_CLK
DUP_F_RXD
DUP_F_TXD
MD0
MD2
FW
/RES
J218
To DC Controller PCB

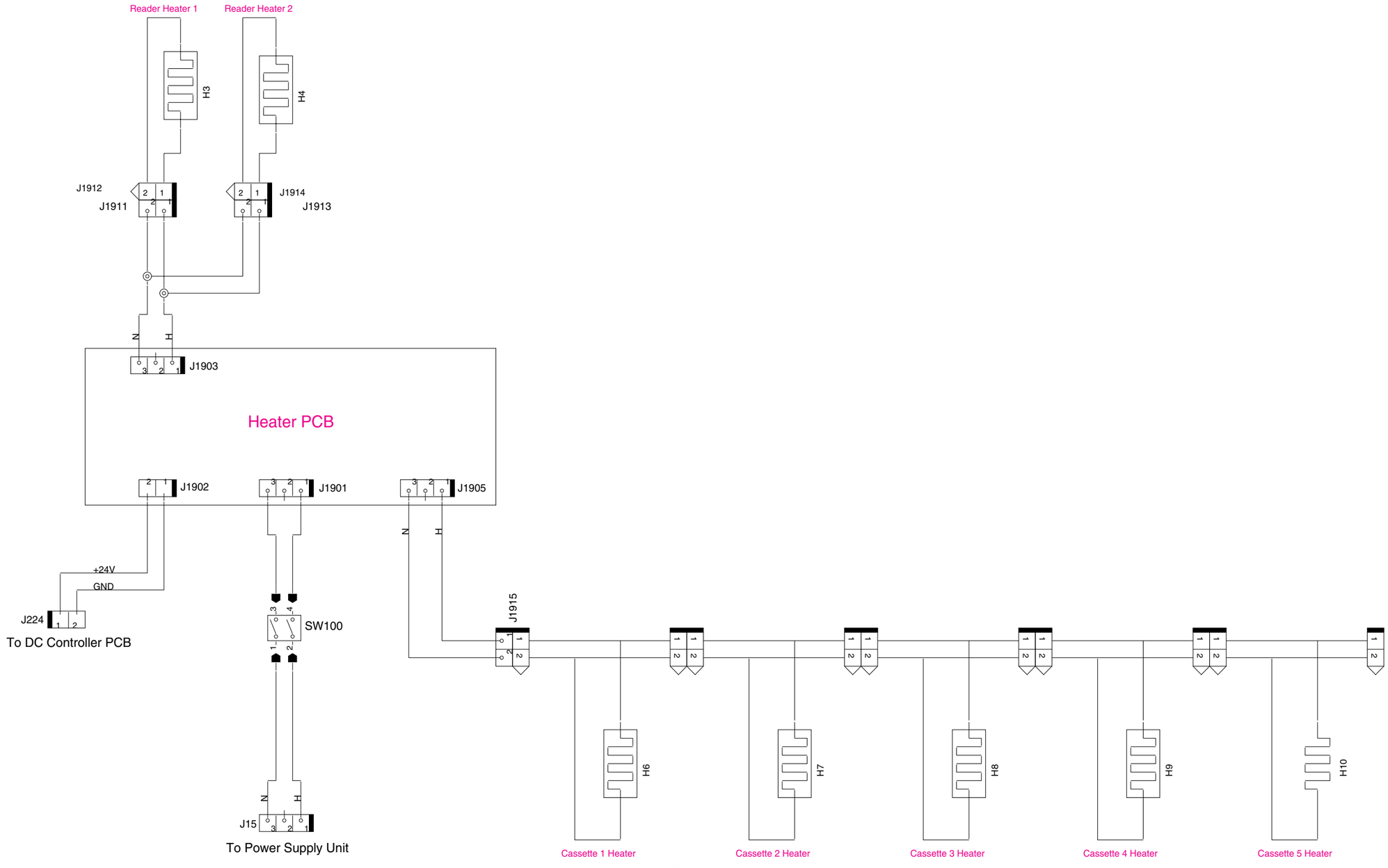
F-2-8


To DC Controller PCB
J220
9 8 7 6 5 4 3 2 1
GND
+24V
/OP_STB
+5R
GND
+3.3R
OP_CLK
OP_RXDL
OP_TXDL
J700
1 2 3 4 5 6 7 8 9 10 11 12
1-Cassette Unit Controller PCB
Cassette 2 Size Detection Switch
SW5
J860
SW14
SW13
GND
SW12
SW11
Cassette 2 Pickup Solenoid
SL3
SL
+24V
SL1_ON
J753DH
J753D
Cassette 2 Paper Sensor
SR5
J754
CSPLED1
GND
CSPSEN1
Cassette 2 Retry Sensor
SR6
FEEDLED1
GND
FEEDSEN1
J755
J704
Connect to Triple Option Cassette
J702
GND
RXD
BUSY
VPP
VDD
SCLK
TXD
PGM
RESET
GND
10 9 8 7 6 5 4 3 2 1
J703
For Flash Writing
13 12 11 10 9 8 7 6 5 4 3 2 1
J701
GND
+24Vop
(No SIGNAL)
(No SIGNAL)
STB
+5R
GND
+3.3R
CLK
RXDL
TXDL
STERNL
J800
1 2 3 4 5 6 7 8 9 10 11 12
To 2-Cassette Unit Controller PCB

F-2-9


To Finisher
To 2-Cassette Unit Controller PCB
+24V
GND
+24V
GND
J50
1
2
J52
1
2
Option Power Supply PCB
J54
1
2
J53
3
2
1
AC(HOT)
AC(NEUTRAL)
ESS
3.3V
GND
J16
1
2
J18
1
2
3
To Power Supply PCB
To Power Supply PCB

F-2-10


Reader Heater 1
Reader Heater 2
H3
H4
J1912
J1911
J1914
J1913
N
H
J1903
Heater PCB
J1902
J1901
J1905
+24V
GND
J224
To DC Controller PCB
SW100
J1915
N
H
J15
To Power Supply Unit
H6
H7
H8
H9
H10
Cassette 1 Heater
Cassette 2 Heater
Cassette 3 Heater
Cassette 4 Heater
Cassette 5 Heater

F-2-11

Canon